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The AMERICAN DENTAL JOURNAL

DR. BERNARD J. CIGRAND, Editor

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Editorials and Comments

"The editor has assumed charge of this journal with the signed understanding that he shall have absolute and unlimited control and supervision of the editorial and literary elements; this unusual grant makes it possible to render the profession an independent periodical; the title page clearly indicates the scope under this new policy of this old established journal."—*Publishers.*

ADVOCATE ACQUIRING MORE DEXTERITY.

If there is one phase of college training which is underestimated in the evolution of a dental practitioner, it is that of digital dexterity. The so-called medical branches of the curriculum fare well on the schedule of the dental college, while the necessary or practical, as also the manual, are considerably short in hours, when compared with the theoretical.

A well known and elderly dentist, some years ago, while addressing an Illinois meeting, hoping to make clear a certain point about processes of construction, stepped to the blackboard, and with considerable effort attempted to diagram a tooth, but the outlines were so out of accord with what he desired to illustrate, that his audience burst forth with hearty laughter, whereupon he humorously remarked, "I can draw a tooth painlessly with a pair of forceps, but with chalk it is awkward to me, and I suppose painful to you." His wit saved him the day, but only after suffering the embarrassment of demonstrating his incapacity at reproducing in picture form what was clear in his mind's eye.

How much better for the venerable practitioner if he had been able to design what he contemplated. The audience would have clearly comprehended the idea, and at a saving of more than half the time. The eye, quicker than the ear, would have registered the picture.

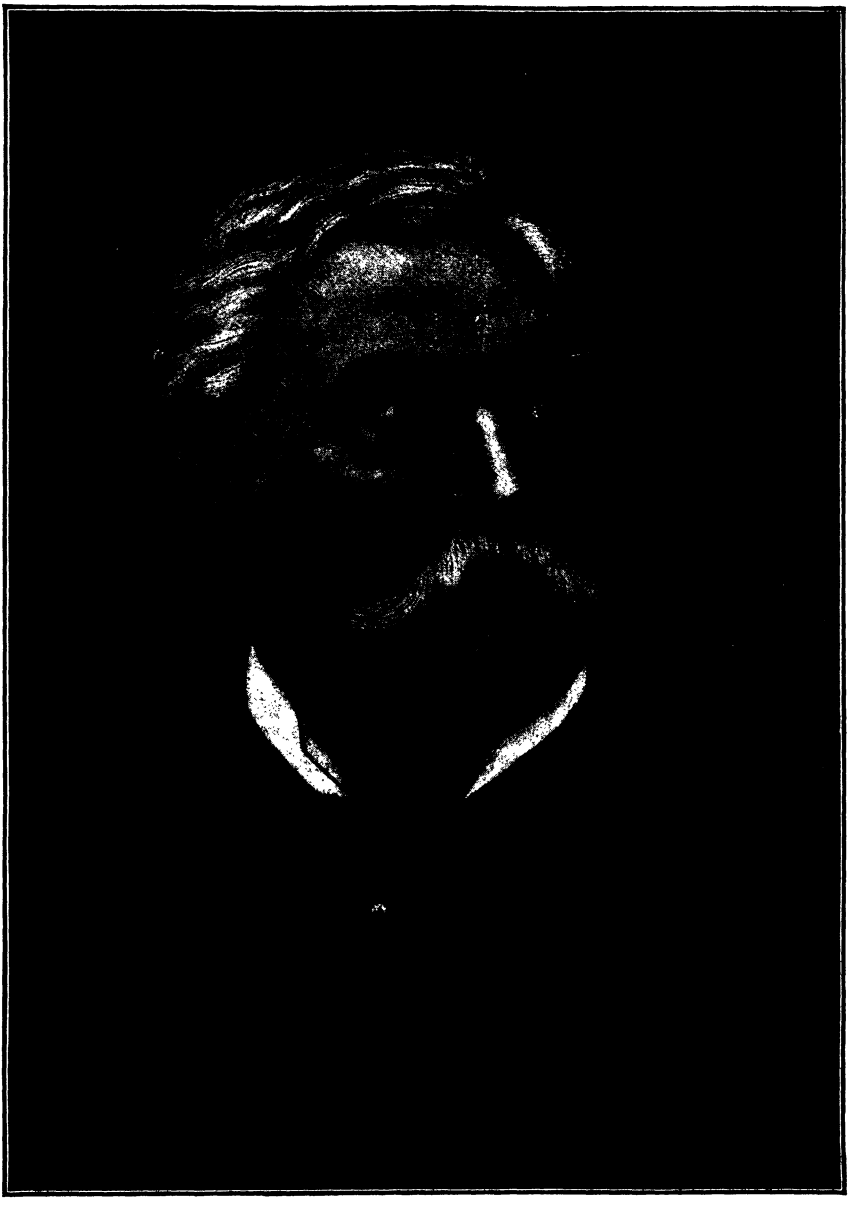
Practitioners quite generally call attention to this lack of hand and finger training, and the eye receives so little instruction in the matter of color and shade construction, that it is conspicuous by its absence. The matching of the forms of teeth, the blending under definite rules, the shade of auto-formed and purchased artificial teeth, scarcely receives anything like a systematic or graded course.

The real art side of dentistry, with its mechanical and physical, properly harmonized, will yet find its way into the college curriculum, and then the graduate will be able to harmonize the artificial with the natural, and the realization of true art will have had its dawn.

The contouring of a gold filling, as well, as the fashioning of a gold crown, demands judgments founded on an appreciation of harmony in shapes, formations, and these elements can best be brought forth when the eye, the hand and fingers have been trained in the fundamentals of "art comparisons." The copying and creating of objects after a given model leads to this ability. If a gold crown is to be placed on the second bicuspid, either superior or inferior, and its natural neighbor has dull or flat cusps, it certainly is out of all accord with the rule of harmony to place any auric substitute aside of it, with sharp and beautifully formed cusps; not only is such a crown out of artistic accord, but by such construction prevents proper lateral movements of a jaw of the lymphatic temperament.

The harmony of abnormality, too, belongs to this character of operative and prosthetic procedures. Artists will tell you that there is even a divine relationship in what we pronounce ugly, rough and uncommon, well illustrated in the tree, plant and animal life. Why do dentists disregard these phases of art rules? Subdued art is science, while displayed art is vulgar and undesirable.

The writer recalls a case in practice where the patient had, while skating, broken off the left central, leaving a root splendidly adapted for porcelain crown—the remaining teeth were the "undeveloped edge" character. To have placed a beautiful formed porcelain crown into the space would have been a bit of artificial or rather superficial



DR. NORMAN W. KINGSLEY
BY HIMSELF
(From The Cigrand Historical Collection)
(*Compliments of the American Dental Journal*)

dentistry which would have been both conspicuous and disregarding of the rules of correspondence. There was one of two things to do, either induce the patron to have the ill-formed natural ones normally restored, by gold or porcelain inserts, or make the artificial crown match the surroundings. The patient's inability to permit of the former impelled the locating of a Davis crown whose tip or incisal edge had been raggedly ground and then pitted to correspond with the adjacent teeth. This case was shown at a college clinic some twelve years ago and bore out the rules of correspondence.

These art rules can be applied by dentists, in both normal and abnormal cases, and the product will be acceptable by critics of the profession and the public.

Now if in our profession, there has been a practitioner who has striven to educate the eye in shade production and the hands and fingers for form construction, that individual is Dr. Norman W. Kingsley of New York. We owe it to him that higher art ideals have come into operative dentistry and prosthetic dentistry and an acknowledgment to him while he is still among us is fitting, becoming and appropriate.

There are a few of our profession who eagerly employ their spare moments cultivating artistic skill; a few of these artist dentists have attained a renown in the realm of fine art, pre-eminent among which we recognize Dr. Norman W. Kingsley, who has for half a century stood high in the estimation of his fellow practitioners. Dr. Kingsley is of a naturally artistic turn of mind and he has executed innumerable pieces of fine art. His chisel work is best illustrated in the marble bust of our Saviour, which he modeled as long ago as 1868. There is a repose and dignity in this work which places it in the catalogue of the famous. A few years ago, he produced in bronze a bust of Hon. Whitelaw Reid and this artistic and life-like design graces the front parlor of the Lotos Club of New York City. In the same room is a portrait of Reid as painted by the eminent English Artist, Herkimer. Dr. W. W. Walker, in speaking of these reproductions, says: "Friends of mine and friends of Dr. Kingsley and friends of Reid have said that of the two they would much prefer the one in bronze, because it was more life-like and artistic. Here is work accomplished in bronze by a mere dentist, while on the other hand is the work of a skilled portrait painter, perhaps the most skilled in

the world, but still the work of the dentist had the call. If the ancient sculptors could have seen the work accomplished by our brother, the men whose chisel produced such work as the Venus de Milo, they would have said, 'It is well done; if not superior, it is at least equal to anything ever seen.' "

His most noteworthy effort, the "Head of Christ," is preeminently the highest point in his art career. A long and interesting story goes with this creation, but space will not permit other than superficial comment on it. Dr. Kingsley had as a praiseworthy ambition the making of a true face of Christ; he labored industriously and with great pains to carve the Master's face. He studied the various sketches by the eminent artists; he carefully analyzed the face as portrayed in the oils, and finally after considerable endeavor furnished the world what may easily be classed as the faithful likeness of Christ. So well did he perform the task that when Dr. Howard Crosby wanted a good picture of Christ for his new life of the Saviour, he chose that of Dr. Kingsley's as the best and blazoned it on the cover page of this high art and great literary religious work. But sculpture is not the limit of Dr. Kingsley's artistic talent. He has produced twelve portraits known as pyrographic reproductions. They represent the famous Rembrandt pictures. He ingeniously contrived a miniature blow-pipe and produced a most esthetic result. He also burnt his own likeness into the wood, and like his other work, this assists in stamping him as the greatest artist-dentist in the world.

Dr. Kingsley was so well thought of that some years ago the Illustrated American devoted considerable space to summarizing his biography. Among the elements of this magazine sketch are the following sentences which are interesting and instructive to all readers: "Dentistry, as a distinct scientific pursuit, did not exist a hundred years ago. Out of the depths of the grossest charlatanism and empiricism America has given to the world a new art and a beneficent profession. The American practitioner is the recognized authority in every civilized capital of the world, and the American dental colleges attract students from every land. Dentistry before 1860 confiend itself mainly to efforts in saving individual teeth and when lost replacing them with artificial ones, and this is now the main occupation of most practitioners. Dentistry claims as its legitimate sphere, in addition to the correction of all irregularities of the teeth and all deformities

of the jaws, the treatment of tumors of the mouth and adjacent parts, the treatment of fractured jaws and cleft palate. The great value of the latter achievement is not known beyond a few of those who, thus afflicted, have received its benefit, described by Dr. Ottolengui, in *Items of Interest.*

It is not generally known that the horrible speech of harelip people is not due to the harelip, but is the result of an absence of the palate, technically known as cleft palate. No more merciful invention was ever conceived than the artificial palate, which gives so fully the function of articulate speech to those unfortunate beings born without a palate. This achievement of dentistry entirely superseded the vain efforts of surgery to accomplish the same result. The credit for this invention is due to Dr. Norman W. Kingsley, who made the first successful apparatus of its kind more than thirty years ago. Since that time persons afflicted in this manner have come to him from all the English speaking quarters of the globe; and hundreds of people who were banished from schools and society because of their inability to articulate, have been made to speak perfectly through his invention. Of very few people can it be so truly said that he is esteemed by his grateful patients as a benefactor of his race. Dr. Kingsley is a representative of the very best type of the skillful, scientific professional dentist. He was peculiarly fitted by nature for a profession which demanded for its pursuit a constant exercise of the inventive faculties.

His education was academic, but his boyhood recreations were the mechanic arts, sketching from nature, engraving on wood, copper, wood carving.

He began practice on Washington square, New York City, more than forty years ago as partner of the then celebrated Dr. Solyman Brown and being a protege of Dr. Parmly, he commenced his career under the most favorable auspices. From the beginning he took rank with the very best of even his senior colleagues. He received the highest prize at the World's Fair Crystal Palace, New York, 1853, for the best examples in carving of porcelain teeth. Again the highest prize was awarded to him at the World's Fair in Paris, 1857, for specimens of his skill, and during the decade from 1850 to 1860 various local exhibitions awarded him gold or silver medals.

The value of his invention of the artificial palate was recognized by his colleagues in the American Dental Convention of 1863, by the

presentation of a gold medal and again by the Odontographic Society of Pennsylvania in another gold medal. In 1864 and 1865, the London Medical and Surgical Societies and the French Academy of Medicine paid him and America the tribute of having made a most merciful and important invention.

On his return from Europe in 1865, he was chosen by the trustees to organize the New York College of Dentistry and was made dean of the faculty and the first "professor of dental art and mechanism."

Dr. Kingsley has held various offices of honor in his profession; president of local societies, president of the State Society, president for sixteen years of the State Board of Censors (a board created by an act of legislature for the examination of dentists), member of the International Medical Congress, London 1881; honorary member of more than twenty dental societies in different parts of the world.

Another branch of dentistry which has claimed the doctor's special attention is the correction of irregularities of the teeth and deformities of the jaws. From 1872 to 1876, he undertook an extensive investigation into the causes of such irregularities, in the pursuit of which he made personal examination of thousands of children in public schools, asylums and other institutions of this country and in in Europe. He embodied the result in an exhaustive monograph which is recognized everywhere as a scientific authority.

The transformation in feature and expression of many of his patients is little short of the marvellous. But while he is an enthusiast in the two specialties described, he is not to be regarded as only a specialist; he must be considered a dentist in every sense. No patient who ever went to him with a trouble that dentistry could remedy was sent away by being told "that is not in my line."

Dr. Kingsley's writings on professional subjects have been standard literature for thirty years. In 1881, his work on "Oral Deformities," a volume of 500 pages, was published by the Appletons and became a text book in the dental colleges.

The doctor's recreations are found in the arts in the line of his boyhood pastimes, and in later years more especially in sculpture. He has quite a collection of portraits and ideals in sculpture of his own execution. The most noted of ideals is a bust of the Saviour in

marble, heroic size, which was executed some years ago and received the highest encomiums. A steel engraving of this head forms the frontispiece of Dr. Howard Crosby's "Life of Christ." One of his best portraits is a bronze bust of the Hon. Whitelaw Reid, editor of the *New York Tribune* and recent candidate for the Vice-presidency. This was presented to the Lotos Club of which Mr. Reid was then president and Dr. Kingsley one of the directors.

To all of which the AMERICAN DENTAL JOURNAL heartily renders appreciation and offers the prayer that Dr. Kingsley may live to enjoy the fruits of an honest service to his patients and public in general. His career will teach us the goodness which comes from observing collateral vocations, will lead us to employ new methods of procedure and it will induce us to improve most of our appliances, besides inculcate in both operator and patient a reverence for the divinely ordained, the supreme model and the safest guide.

COMMENTS.

The general surgeons of today are awakening to the importance of our professional services. In patients awaiting operations involving the elementary systems, the necessity for normal and health conditions in the month is most essential. The most successful operation would be endangered by even the presence of diseased dental pulp and should there be an ulcerated area or suppurating surface superinduced by a distressing tooth, the life of the patient would be threatened. Hence surgeons who are alive to these responsibilities before performing these specified internal operations, do not neglect an examination of the oral cavity if disturbing tissue present themselves and the operation can be postponed, the patient receives the services of the dental surgeon, thus assuring every precautionary measure.

Those who are making a study of the science of neurology are free to admit that dental lesions and oral disturbances inaugurate a variety of mental disorders. Neurotic disturbances having their irigin in dental irritation, do not receive the attention they merit. The dental factors concerned in reflex pains which in reality can be

traced and treated in the mouth are surprisingly numerous. Recent investigations point to the fact that our state asylums—with patients suffering with temporary dementia and various forms of neurasthenia, in truth require only dental attention to be relieved. Physical exhaustion, suspended consciousness and other morbid mental states are too frequently induced through neglected oral circumstances—why not have dentists appointed in these institutions to care for the distressed? Nor do these disorganized dental conditions relate to the asylums alone, the penal institutions as well are disregarding of the comforts which dental science could render. The recent work by McDonald, "Abnormal Man," indicates a wisdom and a depth of observation seldom found in works treating of civil and psychological affairs.

He attributes much of our crimes to illness—to abnormal health—and classes distressing and diseased oral parts as a frequent cause of domestic crime. He calls attention to the fact that the poor in our great cities, where crime so freely flourishes, receive practically no medical, surgical, dental aid, and the depressed and suffering mortals wear out their physical and neural energies in the great fight against pain; and the result is that an exhausted, ill-tempered mind lacking the normal control, unable to carry the burdens of excruciating pain, frequently through perverted judgment commits most desperate crimes.

A fluent tongue does not take the place of hard thinking. Self-confidence is not a substitute for preparation. A good appearance is not such a dependence that a young man may safely neglect the cultivation of his intellectual resources. The superficial wears through after a time. One must go deeper to be ready for the demands of the exacting life of today.—*Selected.*

"If a man can write a better book, preach a better sermon, or make a better mousetrap than his neighbor, though he build his house in the woods, the world will make a beaten path to his door.—*Emerson.*

SPECIAL CONTRIBUTIONS.

THE IMPORTANCE OF ASEPTIC CONDITIONS IN THE REMOVAL OF THE PULP.

BY GEORGE B. HARRIS, B. SC., D. D. S.

How many times a day the pulp is removed without the rubber dam would be hard to estimate; and how many times good teeth are extracted as a direct result of such carelessness, if statistics were possible, would be amazing. The amount of sufferings brought on our patients directly and indirectly by such negligence is inconceivable.

I realize that this subject has been hashed and thrashed until it now remains in such finely divided molecules that the most powerful miscroscope is unable to show us its real self. Yet these important, pain producing structures are being removed by the hundreds every day under the most septic conditions conceivable. This is my excuse and this only for attempting to gather together these molecules and unite them in sufficient numbers to make a redisection possible.

As an example I wish to cite one case, only one of the many I have had and now have where abscesses are the direct result of such unsanitary, careless, yes, criminal operations, as are being performed daily. These cases are as common with other dentists as with me, but with the hope that this case may reach one dentist performing these operations without having the conditions present to insure success, and that he may see its importance, and as a result performs these operations in the future as they should be performed under the aseptic methods now at our command, I will consider that this article has filled its mission and the time consumed in its preparation well spent and myself amply repaid. To him let me say: "Go thou and do likewise."

I call your attention to this one case in preference to any one of the many others, (1) because it is fresh in my mind; (2) because it is a patient any dentist would be glad to number among his practice, and, (3) because I happen to known the patient has had his teeth taken care of by his dentist for a long time, and is a personal friend of the dentist. These reasons should be sufficient for any dentist to

do his best, for no matter how independent he may consider himself, and it also eliminates any reason the dentist might have for not taking the care and devoting the time necessary to produce the results this patient, as well as any other, has a perfect right to expect from those to whom they go for relief and assistance.

The tooth in question was an upper second molar. It had ached a little at times, though not hard nor steady. Upon examination the dentist decided to remove the pulp. This was done without using the rubber dam, and a treatment put in. The patient was told to return in a week. (The patient is a traveling salesman and would be put to considerable expense to return for a treatment in the meantime, however, he would if necessary, and did for me on once occasion, coming two hundred miles for the treatment.)

The patient returned at the end of the week and reported no trouble from the tooth. The dentist then stated that he would just let the treatment remain as it was for another week. He did. Why? Too busy? Too what? Was that caries sterile when he removed the pulp, and how long would those canals remain sterile after pulp had been removed without the rubber dam? Could any antiseptic be placed in those canals and left there those two weeks and still keep the canals sterile after such a treatment? What drug could be expected to do this? Where is the place in the tooth structure that an antiseptic could be put in sufficient quantities to act as a reservoir and keep these canals perpetually sterile, or sterile for two weeks?

The result I need not mention. Infection? How could we expect anything else when we consider that the mouth houses more bacteria than there are people in New York City and Philadelphia combined. Infection? Yes, abscess and all the pain and agonies that go with it. The removal of the pulp spells *abscess* in itself.

This is one case. How many cases there are like this I would not attempt to guess. What effect did this abscess have on the general health of this one individual? It utterly spoiled his summer vacation, caused him untold agony, and has cost hundreds of dollars in lost time. The suffering brought on him by one whose judgment he did not question, in whom he had placed his confidence, and whose advice he faithfully followed, can only be imagined. This is the price he paid because the dentist failed to use strict aseptic conditions obtained so easily by the use of the rubber dam. It is the price many

others are paying and will have to continue to do so until sterile conditions are used by everybody all the time.

"An ounce of prevention is worth a pound of cure." Let's use more prevention and less cure. We all have a rubber dam in our offices. Let's get it out and *use it.*

CONSERVE YOUR ENERGY—ECONOMIZE YOUR TIME.*

B. J. CIGRAND, B.S., M.S., D.D.S., CHICAGO, ILLINOIS.

For actual services rendered, the dentist is least paid of any of the professional men. The time required in training and the general character of his qualifications should bring him greater remuneration.

It should be the endeavor of every dentist to produce the desired results with the least possible strain on himself and patient. And the true observance of this rule will prove a most powerful factor in benefiting the dentist and alleviating the suffering public. Too often operators in order to attain certain effects, perform the operation by a method involving more nerve-force than would be required by possibly a simpler or more direct process. It is not always imperative to employ the method which consumes the greatest amount of time and patience; neither does such a method indicate that success is its natural and immediate sequence; far from this do we find the experience of the past to record and permit me to refer to the days when the conscientious operators without the aid of the rubber dam imbedded large gold fillings—the work was arduous, consuming time, patience and even life, while today, with the assistance of the thin vulcanite our ideal is realized with ease and certainty. We all too well know that our vocation is of a character fully impregnated with trials and tribulations, which not only try our nerves, but our souls as well. And if in our intercommunications we arrive at conclusions which will assist in simplifying, with-

*At present, one hears considerable about "Conservation of Natural Resources," and it may be of service to hard toiling dentists to read this article, as it is a paper, with unchanged title, read before the Hayden or Englewood Dental Society some years ago, and published here for **the first time.**

out malifying the work in hand, and at the same time afford a diminution of suffering to our patrons, we will be practicing our profession in the most humanitarian manner possible.

Probably the most absorbing topic during the past year at all the dental conventions was the subject of inlays. For some four or five years the porcelain inlay has claimed considerable attention, but of late the gold inlay has come considerably forward. There are at the present still some few practitioners who advocate a filling or a crown, denying the inlay its proper credit. We need not dwell on the general merits of an inlay of gold—granting that good judgment has been used in its location. The manner of construction remains quiet for the present, a matter of personal equation, since nothing in the form of an accepted system has been evolved.

A great variety of methods has been prominently demonstrated at the conventions, and for the most part the various methods bring out excellent ideas. The initial operation of cavity preparation is one which deserves more serious thought. We are yet in an experimental epoch as regards cavity preparation for gold inlays. There are those who say prepare the marginal outlines and general character as for gold; while there are those who claim that the cavity need not be extended so far as in cases of gold. The latter advocates have considerably the better ground in the argument. "Extension for prevention" has been an axiom in operative dentistry and applies to gold and amalgam fillings—more especially the former.

We often extend a cavity considerably beyond the ordinary requirement simply to get strong walls—to resist the blow of the mallet in driving and packing the gold. This is not required in gold inlay work, in fact the inlay can be readily adapted to walls not even pronounced "blow worthy" and give the best of results. The gold inlay has so many merits that emphasis on the pronounced ones seem unnecessary.

The method of producing the matrix is important. The swage method—where a die and counter die of the cavity are made in metal, cement or composition—has its good points, though its shortcomings must not be overlooked. When you swage a piece of gold into a bowl-shaped cavity there must of necessity be corrugations, wrinkles and folds, though these can to some extent be burnished away, the fibrous character of the gold has been disturbed, and when

this swaged cap is subjected to heat the tendency is to distort and act contrary to the rules of warpage.

This fibrous change in the metal does not occur to the practitioners, but careful examination under the lens will so tell you that no matter how carefully you swage the matrix to fit the cavity when this gold, which has been changed in its fibrous relation or its grain characterization and thence submitted to heat, a variation of shape is observed. And when this cap is flown full of gold the shrinkage of the solder still adds to the tendency to further alter the original fit. Regardless of the investment compound or your known ability to control gold, the heat affects the general outlines of this swaged matrix. What is true of the gold matrix is likewise true of the platinum matrix. Just as long as we practice in variance with the underlying principles of chemistry and metallurgy we can anticipate difficulties of misfit and abortive results. The criticism may seem to many as too severe but diligent investigation along this line with special care to have the chemistry of the case constantly in mind will disclose a few items deserving of our notice. It matters not what system or method of swaging you employ these variations will be found and if you can overcome this physical alteration, well and good. But up to this writing the matter has not been brought to the writer's attention. Hence, a process of producing the matrix is paramount. There can be no division of thought on the essential of having the matrix fit the cavity and its subsequent treatment to leave it unchanged.

Now the method I recently demonstrated at the Brewster clinic, for making a matrix so it will remain just as it was when taken from the cavity is simply as follows: After having prepared the simple occlusal cavity with the walls slightly verging toward the center of the cavity, get the wall measurement by using a thin strip of copper band or a fine copper wire; then cut the gold to this required length, and after soldering same you have a gold band which has the actual wall space of the cavity; then bend the gold band to the required outlines of the cavity and possibly the gold will fit a trifle loose, remove the gold and enlarge, re-insert the gold and with burnishers hold the gold against the walls of the cavity and accurately fit the gold to the margins of the cavity. Then place sandarach on the occlusal surface of the

tooth, lay a piece of pure gold over the occlusal surface, containing the gold-lined cavity, have the patient occlude the teeth and by this simple means get the antagonism of the opposing teeth. Now with sharp hoe mark the surface of the pure gold as it rests above the gold lining of the cavity. Remove pure gold and matrix and solder together. Add solder on the concave or counter-sunk side and then turn off the appended borders of the pure gold. You now have a gold inlay in the form of capsule with the floor of the capsule acting as the occlusal surface. By this method you have also added surface for your cement, since it can attach itself to both the external and internal surfaces of the matrix. (Taggart's method not yet made public.)

By the old method we swage the gold and then fill the capsule with solder and filing, adding gold and labor and destroying the anchorage and durability of the inlay.

This method completely reverses the method of constructing the gold inlay and assures against the possibility of alterations under the influence of heat. The principle is simply this: A gold band having fibres of grain encircling the metal is soldered upon a separate piece of gold having the gold fibres in a longitudinal direction, and the heat does not disarrange the fibres.

Many dentists advocate the use of filings and scraps for the "filler," but this is a mistake, since the inlay when complete does not glisten as does a gold filling, and the primal feature of a gold inlay is to appear and serve as a gold filling—hence the filler must be made of gold pellets and high fusing gold solder.

The gold inlay is coming to the profession in a manner which indicates its value in certain special cases. We must save teeth more by the use of the gold inlay. This method of tooth restoration and preservation is too little appreciated.

I have for some time busied myself in the hope of finding a method whereby gold inlays could be produced without the employment of a matrix of either gold or platinum.

This class of inlays belongs to the occlusal and buccal kind, where we can get parallel and complete wall surface. I prepare the cavity the same as for my ribbon inlay. I then take the leaf gold which is used for gold fillings, fold it in a manner yielding a cylinder about the size of a slate-pencil. I roll the gold in thin silk camphorated

paper and clip the cylinder into small pellets of such length as the cavity indicates, leaving pellets extending about one thirty-second of an inch. I then insert a pellet. I next flatten the pellet of gold laterally, using McMillen's method of inserting a gold filling. In inserting the next pellet I add gum arabic and continue to add the small cylinders of gold until the cavity is filled. Between each cylinder I add the gum arabic. This is employed to hold the cylinders tightly together without heavy pressure or maleting. Then with a tightly together without heavy pressure or malleting. Then with a easily remove the pure gold inlay. You then flow a low gold solution on the occlusal surface and the gold solder quickly knits the entire mass, the camphorated silk paper burning out and substituted by gold solder.

In molars the same method is employed. It may be that I am advocating the gold inlay too pronouncedly, but my present successes lead me to earnestly advocate their use, since they are tooth preservers and health preservers—this latter qualification relates especially to the operator.

If you are fearful that the solder may disturb the external or wall surfaces apply gum arabic and then coat the external surfaces by applying strip of gold leaf; then invest the inlay in plaster and pumice or time sand, and after thoroughly drying the case flow the low fusing solder. The character of the solder has much to do with the finished appearance of the inlay, hence use only such solders as have the shade of pure gold as in filling. If this precaution is observed the finished product will be similar to the gold-filled cavity.

A solder of gold for this method of inlays is as follows:

Gold coin	6 dwt.
Pure silver	30 grs.
Pure copper	20 grs.
Brass	10 grs.

The fact that you have built the body of the inlay with pure gold foil permits you to use the above low fusing solder and admits of a high finish.

The compound cavity involving several surfaces often presents features which at first thought would contraindicate a gold inlay. The cavity is deep and has deep undercuts, and if these overhanging

walls are trimmed down to a point admitting of a perfect fit the tooth would require considerable cutting down. In such cases splendid results can be obtained if you carefully remove all the decayed tooth structure and eliminate such of the soft dentine as your judgment directs, then fill the base and undercuts with cement or amalgam, and after a lapse of ten hours you may proceed to place your gold inlay, cutting the cavity into the cement or amalgam, allowing the margins of the cavity to guide you in the outline of the cavity. There can be no objection to first filling the cavity entire, and later shaping the inlay cavity in the filling previously inserted.

Of late the matrix has become a valuable appliance in operative dentistry, and its use in prosthetic work is just beginning to dawn. Some fifteen years ago the use of a matrix in the operation of inserting a gold filling was pronounced an adjunct to the novice, that its use was indicative of inability, while today its employment is a mark of wisdom. The matrix can be employed in gold inlay work, where you desire protection and support or guidance. The matrix advocated by Prof. Crenshaw is the most serviceable matrix, possessing an adjustable ribbon the best I have yet seen. Its use and great adaptability is readily understood and its meritorious features can scarcely be over estimated. The cases illustrate its advantages, and any appliance which aids in diminishing pain to the patient and labor to the operator without impairing the durability and aesthetic results of the operation should commend itself to the practitioner.

It not infrequently occurs that a biscuspid is decayed on both the occlusal and distal surfaces, while the adjoining tooth, either distal or mesial, is missing. In such cases the cavity construction is considerably different from cases decayed, and the adjoining teeth *in situ*. This may not be clear to you—but I hope to make it plain before finishing this article.

While attending a recent clinic in an adjoining state, I had the pleasure of seeing a clever operator insert a porcelain filling or inlay in an upper left second molar, first molar having been extracted five years ago. The patient not wishing to wear a plate or allowing bridge work to replace the lost molar, she insisted that since the missing molar was the only lost tooth in her entire denture she preferred to leave the space unsubstituted. She displayed good judgment no doubt; but now as to the inlay that the clinician inserted.

The decay on the occlusal surface was small, possibly size of gauge 11, while the mesial surface decay was somewhat larger—gauge 5—the two cavities were connected with something more than fissure opening. The operator immediately, by use of chisel and burr, cut through the occlusal surface, broke down the enamel and created a large cavity; drilled and burrowed into the tooth structure with impunity—indicative of positive reckless disregard for the value of the sound tooth structure. The patient endured it all—notwithstanding her jealous regard of dental structure. The operator so prepared the cavity that he could insert the inlay occlusally. The fault or criticism to be found with this method of procedure was that this class of cavities—and they are indeed numerous—is that this gold inlay could have been inserted mesially, hence saving the natural strength of the occlusal surface, besides preventing the display of the mammoth gold inlay. The huge block appearance made a decided mechanical impression. It lacked harmony of outline; it was devoid of the curves which lend beauty to the finished product; its square corners and its cubic character were elements which were exponents of a craft quite other than those which are found in the curriculae of artistic dentistry. Of course, I am not contending that all our inlays should give evidence of Hogarth's line of beauty, but I advocate the appreciation of the essentials of artistic curves.

In order to insert an inlay mesially or distally and spare occlusal structure, a few principles of mortising are required. First of all the walls must not deviate from the marginal lines of the cavity; they can deviate towards a common center, but if deviated from this point insertion or elimination are made impossible. The cavity can enlarge from its occluso-distal or mesial margin and be expanded into a wide and enlarged base.

SUGGESTION.

As I sit in my chair midst dental appliance,
There comes to my mind the subject suggestion,
A factor important in medical science
But just how it acts, is, with many, a question.

We're told about power stored up in gray matter,
Hence thru will, we may oft relieve a depression
By causing the red corpuscles to scatter,
Thereby dissipating a painful congestion.

What is this suggestion but mental command,—
An impulse that travels a neurotic track?
Perchance it may be sent down to the hand
Or switched thru a ganglion and sent to the back.

'Tis an auxiliary force, not a system, *per se,*
For who would risk it in cerebral thrombosis
—A fibrinous clot in an artery—
Or a well advanced case of tuberculosis?

"Mind over matter?" Yes, to quite an extent,
For, to dwell on one's illness is sure to enhance it:
"As the sprout is inclined," so the tree will be bent—
A truthful old saw; so here I advance it.

How often we've heard (in a case of small ills),
Of a doctor who "knew 'twas all in her mind,"
How he rolled and "exhibited" little bread pills,
And soon came the health for which she had pined.

* * * * * * * * *

By dint of long years of much imbibition,
Of scientific nomenclature, so we are told,
We wear in our mien, in plain exhibition,
A soul of the form of professional mold.

—J. D. ROBERTSON, M. D., D. D. S.

EUROPEAN PROGRESS.

CONDUCTED BY THOMAS L. LARSENEUR, D. D. S.

A NEW METAL IN DENTISTRY.*

BY M. G. MICHEL.

(*Le Laboratoire et le Progres Dentaire Reunis,* Paris, July 17, 1910.)

Tantalum is a metal which has already been in use in electric bulbs in the form of a very small wire, its discovery dates over a century and at that time was considered as a new element.

In its crude state, it has the appearance of a gray mass which is brittle and very hard, and it was many years before industry took hold of it.

The researches which followed the discovery to obtain it in a pure state after several experiments showed that America, Australia and Europe were well supplied with it.

The ore containing it is combined with iron or manganese. The best quality of ore is found in Australia and is called *"Tantalite."* It contains from 50 to 70 per cent of tantalum. The American ores, which are called *"Columbite"* are much lower in percentage and only contain from 10 to 40 per cent.

It is obtained by first treating the ore by a special process in order to obtain the tantalum acid, which appears under the form of a white powder which is afterwards reduced into metallic tantalum.

This tantalum metal which appears under the form of a black powder, is then melted in electric ovens and poured into bright ingots which are now ready to be worked.

It was only in 1903, at the laboratory of Siemens and Halske, where a number of researches and experiments were made with all metals which were not very well known, in order to utilize them for incandescent wires for incandescent electric bulbs, and it is then that the discovery was made in obtaining pure tantalum.

Chemically pure, it is a brilliant metal, heavy, having the color of platinum, and the hardness of steel. Its specific weight is between 16 and 17. It is very malleable. Its force of resistance is of 90 kilograms to the square mm.

*Paper read before the Societe Belge d'Odontologie, April 30, 1910.

It is almost impossible to fuse it in open air. Its fusing point in a closed crucible is 2,300°C., although in a vacuum, it may attain white heat without undergoing any alteration. This feature is what has made it valuable in the construction of electric bulbs.

One of the qualities which should call our attention to tantalum is its resistance to oxidation.

Acids nor alcalies have any effect on it. It seems that hydrofluoric acid has some effect on tantalum.

A COLLARLESS PIVOT TOOTH.

BY DR. W. SACHES, OF BERLIN.

(*Correspondenz Blatt Fur-Zahnartz.*)

It may perhaps be accepted that the oldest and simplest method of replacing the crown of a front tooth, lost through caries or trauma, is with the pivot tooth. A natural tooth, to some extent suitable in shape and color was chosen, the root was cut off, and the canal of the root standing in the maxilla was enlarged to a tube of about 1½ to 2mm. wide by 6 to 7mm. deep. A corresponding canal was drilled in the crown to be inserted, and both were united by means of a hard wooden peg. An animal's tooth was likewise sometimes employed, or a body was cut out of ivory, bone, or similar substance, which approached the form of the natural tooth in appearance. These methods, up to the beginning of the eighteenth century, and until the porcelain teeth invented by Lechateau took their place, had not been superseded by any other.

To enumerate all the various kinds of pivot teeth which were constructed for about 100 years and found more or less numerous adherents would exceed the time at my disposal, but it will not, perhaps, be out of place to mention a few which enjoyed the greatest importance and employment.

The porcelain crowns which were first constructed as pivot teeth consisted of a solid porcelain body, approximately in the form of a natural crown. In the basal surface there was a canal of about 3mm. in depth, the diameter of which approximately amounted to 2mm. The connection of the crown with the natural root was effected as described above, viz.: by means of a wooden peg which was introduced

into the enlarged root-canal. Vanderpant employed a tube tooth with platinum tube. He fitted a hard metal post into the enlarged root-canal, and ground the base of a porcelain tooth, as far as possible, exactly to fit the root surface according to a model which he constructed; the post projecting from the root served for the union of the crown with the post by means of tin soldering or amalgam. A few fibres of floss silk wound round the post caused it to find security in the root-canal.

When flat teeth with platinum pins were constructed by the manufacturers, the tooth was either soldered together with the root post, a small metal plate lying against the root surface, or the natural form of a tooth was constructed by the addition of rubber, tin (Herbest), or porcelain—a method which today is still largely employed.

Bonwill made full porcelain crowns, both for incisors and for canines, also for the premolars and molars which possessed a canal passing right through. The posts were fixed in the root-canals by means of cement or amalgam. The basal surface of the artificial teeth was previously ground in such a manner that it was attached, as far as possible, accurately to the root surface.

Thereupon the crown was placed upon the projecting root post and the hollow space was filled with amalgam.

Howe's crown enjoyed popularity for a long time. This consists of a porcelain front with four pins, between which there is a depression in the porcelain. A metal post provided with a thread was screwed into the root-canal. The base of the root was undercut slightly, and the porcelain crown was ground in such a way that it became exactly attached to labial surface of the root edge, while the lingual portion remained for the moment completely free. With suitable pliers the platinum pins were pressed tightly to the projecting root post, and the hollow space on the lingual surface was entirely filled with amalgam mixed to a soft consistency.

The Davis crown likewise, as well as the Justi and the White crowns, have found many adherents, and even today are employed to a large extent. These crowns consist of a solid body in the base of which there is a canal from 3 to 4mm. deep. A separate post is permanently fixed in the root-canal after the crown of the root surface is correspondingly shaped, and the crown is thereupon cemented upon the elongated root post.

To enter into my discussion in regard to the Logan crown, which

is today still very much in favor, is needless. This crown which is so beautiful and has so much power of resistance, is known to all of us.

The new Richmond crown is distinguished from the Bonwill crown by the fact that its basal surface is not like that of the Logan crown, but is cut out wedge shape, to which end the root surface has to be correspondingly adapted.

The Brown crown may be described as a modification of the Logan and the new Richmond crown. Its basal surface is raised cone shape, so that we have to produce in the root surface a corresponding saucer-shaped depression. Two pivot tooth methods indicated by me, in which a tube is employed, pinion shape, with a knee-shaped post, are described in detail in the first and second edition of Scheff's Handbook.

All these methods of pivot tooth substitutes enumerated have more or less the disadvantage that they do not afford to the root complete protection against caries. It has also been emphasized as a defect that the root is exposed to fracture in the masticatory act of being overburdened. This fear is perhaps only well founded in those cases in which the root in itself has little capacity for resistance (upper lateral incisors and lower incisors), or in which the canal has been enlarged in an incompetent manner, so that the tooth substance has been quite unnecessarily weakened, or in those cases in which caries has already weakened the body of the root. When, about the beginning of the eighties of last century, Richmond invented a method of protecting the root by means of a collar which reached beyond the top of the root, the method was received with great enthusiasm by the dental world, and it may, perhaps, up to now be described as the most excellent method of protecting the natural root against caries and splintering. But even this method, which is otherwise so perfect, has many defects, to recognize which requires years of experience and observation. The chief defect, no doubt, must be considered the destruction which occurs to the ligamentum circular by the fixing of the collar in cases in which it must not be visible. It is a well-known fact that the ligamentum of which has been detached from the periosteum often fall a prey to pyorrhea alveolaris. The cervical edge also retracts in the course of years, so that the gold collar becomes visible. When I further mention the absolute fact that we rarely succeed in constructing the metal collar which surrounds the root so that it fits absolutely, exactly to the circumference of the root, and that the fitting of the

collar to the root itself when there is infiltration of the gum, often causes the patient most violent pains which has such an enduring effect upon his memory that later on a pivot tooth, which may become necessary, is straightway refused by him, because he assumes that a collar crown is again to be constructed—it is seen that this beautiful method, which is particularly suitable for bridges and molar crowns, cannot be considered to be free from objection, especially for front teeth.

Many dentists, for the reason given, have limited the employment of the collar crown as far as possible, and now only employ it in those cases in which there are special important indications for it. It may be considered as only natural for the practitioner ever to be seeking for new methods of making pivot teeth which shall be free from the defects of known methods. When we are in a position to construct an artificial crown which adapts itself perfectly to the base of the root, we can reckon with relative certainty upon the fact that the root is protected against caries.

The invention of the casting method gives us the means to hand for this purpose. I have employed in my practice a simple method for central incisors, canines, and premolars, which, according to my experience, has proved of practical utility. I must confess to you that I often find it difficult not to employ in all cases the banded crown, which I used in my practice almost exclusively for more than twenty-five years. For roots which are to be employed as supporting pillars for bridges, I prefer the banded crown even today, because by the strong lever action which a bridge support has to bear during mastication it affords the root great security against splintering. I also employ the collar crown for the lateral upper and the four mandibular incisor teeth, but for single central incisors, canines, and premolars, I believe the method which I am about to explain must receive the preference.

Let us take for example, a central incisor. The root is ground smooth to the level of the gum, and the labial edge is bevelled somewhat below the gum. The enamel edges attached to the base of the root are not removed, as is the case when we employ the bended crown; the root foramen must self-evidently be closed by a suitable filling. A simple porcelain facing with the pins standing side by side is fitted in such a manner that it touches only with the extremest edge, the labial edge of the root. For this method a platinum-iridium post, bent knee-shape (*bayonet-shape*), is reguired, which for the upper central in-

cisors, canines, and mandibular premolars must be about 1.5 to 1.7mm. and 7mm. long. I may remark that I have induced the firm of C. Ash & Sons to construct such ready-made knee-shaped posts, and likewise drills which correspond to the exact shape of the post. By means of these the work of the dentist is extraordinarily simplified. I consider it necessary that these posts should be constructed of one piece—not of two pieces joined together at the knee with solder—because it is just at the knee where the greatest pressure takes place during the masticatory act, and a soldered joint can never be so capable of resistance as a solid piece, such as we should endeavor to procure for the security of the post. When the root-canal has been drilled out to receive the post, we construct on the lingual side of the canal an enlargement of about 2mm. deep for the reception of the knee portion of the post. By means of this preparation we secure the following advantage: The portion of the post which is situated in the root is not subjected to the danger of turning round on its own axis, as the knee portion enters into the lateral depression. Furthermore, the elongation of the post which projects from the root-canal allows the unimpeded fitting of the porcelain crown, whereas a simple straight post would only permit the porcelain surface in exceptional cases to occupy its right place. A straight post has first to be greatly filed away on the labial side, and a half-round gutter has to be ground in the porcelain tooth between the pins, in order to secure the right position for the crown. Owing to this filing and grinding the post and the crown are considerably weakened; indeed, in many cases it is not at all possible to place the porcelain facing correctly if a second post is employed. It is recommended after the preparation of the root and the insertion of the metal post that an impression be taken and the porcelain facing fitted correctly to the model of this impression, in which the post is now situated. Upon the model, the post is united with the porcelain surface with wax, which we employ for gold inlays, and form correspondingly the tongue surface of the natural tooth crown. We are able to bend the pins tightly around the post with flat pliers. This, however, is not absolutely necessary, because, where the occlusion is shallow, the post to be covered by the wax must be correspondingly shortened. A roughening of the post gives a better hold for the wax. We remove the whole from the model, add upon the basal surface another small drop of new wax, press the whole upon the root with moderately strong pressure as long as this drop of wax is still soft, cool the wax with a

stream of cold water, remove the wax which protrudes on the root surface, and, carefully seeking after the exact root contour, also having regard to the articulation, we then replace the wax with a gold back by the casting method. After the work is trimmed and polished the tooth is connected with the root by means of cement thinly mixed, or with soft gutta-percha.

The root-post, knee-shape in form, as has already been previously mentioned, can be employed for upper incisors, canines, and likewise for lower canines and premolars. Mandibular incisors, on account of their smaller root volume, require a collar crown. For premolars a small metal framework with two root posts is employed. The posts are considerably shorter and thinner than such as are needful for incisors and canines. As the great majority of the upper premolars possess two root-canals, two root posts must be present. For premolars the root-canals of which are united in one, as is also the case in many second premolars, we bend the posts together at their terminals.

The dissolution of the cement is not to be feared. If we give way to this fear we should have to desist from the construction of every inlay filling. The attachment of the metal base to the root surface is so exact that the requisite material for fixing may only be present to an extraordinarily slight extent. I am convinced that this method, on account of its simplicity, will satisfy you. It must not be thought that the construction of crowns by the method described by any means takes less time or less conscientiousness in execution than the construction of a banded crown. It is, however, simple, hence crowns can be made faultlessly by those of little experience and skill. This method also allows of the adoption of these modifications: The porcelain surfaces need not be directly cast together, but after being modelled in wax and tried in the mouth are removed again, and are united with the gold framework after they are cast by means of cement. For incisors and canines this method of fixing the porcelain tooth after the casting is made, can only be employed when the height of the occlusion permits of the presence of a powerful metal back; for premolars this is nearly always possible. It has this advantage: The porcelain facing is not subjected to the fire, and for this reason it is in itself more reliable in its security. Should the tooth splinter in the mouth, the removal of the gold framework is not necessary; a tooth can quickly be substituted and fixed with cement.—*Ash's Quarterly*, July, 1910.

PORCELAIN INLAY WITH A CAST GOLD INLAY BASE.

BY H. LEGER-DOREZ.

(*Le Laboratoire et le Progres Dentaire Reunis,* Paris, June 5, 1910.)

This method is specially applied for cervical cavities and specially those in the canine where the decay has gone beyond the cervix, involving a part or portion of the root. It is a well known fact to all that it is almost impossible to obtain a perfect fitting porcelain inlay in such cavities.

Fortunately with the new methods given us by the casting process these cavities can easily be filled to perfection. Instead of using a platinum matrix which, in such cases, was more than difficult; the cavity is prepared as for an ordinary gold inlay and the impression is taken with inlay-wax in the usual manner. The sprue is now inserted horizontally in the center of the wax and the wax impression is removed from the cavity.

In order to hollow the wax impression without changing its shape, the following method may be used: As soon as the wax impression is removed from the cavity a second sprue is attached to the base of it and this second sprue is placed in position on the base of the casting ring. With a brush, a thin coating of investment is carefully placed over the base of the wax impression and round the second sprue wire and also in the base of the ring in such a way so as to hold it firm in position. As soon as this investment is sufficiently hard, the first sprue wire is removed by slightly heating it up.

With a spoon excavator the labial surface of the wax may be hollowed so as to have a cavity in the wax impression which is intended to be filled later with porcelain. This carved cavity in the wax impression should, of course, extend as close as possible to the margins so as to hide the gold with the porcelain after the inlay is completed. If this is followed with care there will be no gold seen when the inlay is placed in the cavity.*

The next step is to place this investment and wax in cold water so that the investment which will be poured over this will adhere perfectly to the first which has been dried and the ring is filled in the

*Roach's suction wax carver may be used to advantage in connection with the spoon excavator.—*T. L. Larseneur.*

usual manner, allowed to dry, heated and finally the casting with 22k. gold is made. The result of this casting will give a perfect fitting cast matrix having a cavity suitable for a porcelain inlay.

It should now be boiled in acid and thoroughly washed in water, dried and washed in ether, filled with low-fusing porcelain and baked very slowly so that the floor will be well covered with the body. It sometimes requires two or three bakings before the cavity is sufficiently filled.

The inlay is then completed and should be cemented to the cavity preferably with Harvard cement.

INHALATIONS OF ETHER AN ANTIDOTE TO COCAINE.

(*The Dental Surgeon,* May 21, 1910.)

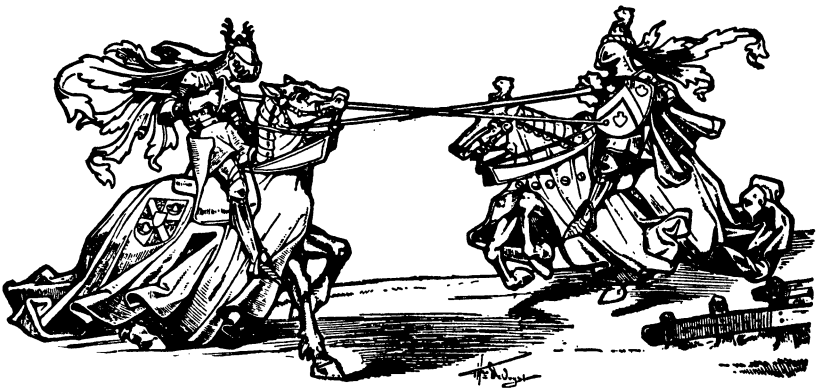
Injections of ether are a common practice to combat cardiac failure in cocaine poisoning, but Dr. Engstad recommends that the ether be inhaled.

He appears to have had experience in several cases of accidental poisoning arising from cocaine anesthesia. At first he had recourse to injections of strychnine and morphine, but he found that their action was too slow to be depended upon where life was really in danger. Ether inhalations on the other hand, rapidly stimulate the respiratory and the vasomoter centers, and at the same time exercise a powerful tonic effect upon the cardiac muscle.

In all these respects, therefore, ether acts as a direct antagonist to cocaine. Under the influence of the inhalations the pulse becomes fuller and recovers its tone, mental excitement abates, and the other symptoms of intoxication disappear.

The etherization should only be pushed to a slight degree of narcosis and for this purpose the ether should be administered by the drop method on an open mask, so as not to hinder a free access of air to the lungs. The author claims to have succeeded by this method in the recovery of patients almost despaired of. He suggests that the same method would be applicable in cases of stovaine poisoning.—*Hospital.*

PROFESSIONAL ARENA.



[In the space devoted to this department many of the so-called solved problems are to be opened for re-examination. Besides such other topics as are of greatest importance will be brought to the attention of the readers, and ablest talent will be engaged to discuss interesting dental themes. The subject under consideration for the present is: "Should the dentist charge by the time or service rendered?" We invite you to send in a short discussion on this problem. This is a topic in which all are concerned, and your opinion and experience is sought, as good will come from these comparative deductions.—EDITOR.]

ANSWER TO DR. EDWARD C. KIRK'S PAPER ENTITLED "SUSCEPTIBILITY AND IMMUNITY TO DENTAL CARIES."

BY J. OXFORD KELLER, D.D.S., CHICAGO.

Dr. Kirk's paper was read before the First District Dental Society of the State of New York, February 8, 1910, and published in July, 1910, *Cosmos*. The first three pages are devoted to showing that the salivary secretions are not possessed of any antiseptic properties. See *Cosmos*, page 731, column 2, paragraph 1, which reads as follows:—

"The publication of the exhaustive researches of Miller in 1903, as it seems to me, has placed the matter beyond the possibility of further question, by reducing it to a demonstration that the saliva does not possess any antiseptic properties at all, thus confirming what we had, upon general principles, good reason to suspect."

In the concluding part of the next paragraph, Dr. Kirk further states:—

"The majority of students on the subject are in accord as to the correctness of Miller's conclusions, or as expressed by Dr. C. V. Black, in answer to the inquiry of the correspondent of the Dental Society of the State of New York as to whether the normal salivary secretion has any inherent antiseptic quality:—all that is necessary from me is an emphatic No." (*Dental Cosmos,* page 1425, Vol. 1, December, 1908.)

The opinions of parties in question or of no one is necessary to determine a self-evident proposition, as to whether the saliva has antiseptic properties. A glance at its general average composition will show that it does not contain any antiseptic chemical in sufficient percentage to cause antisepsis, either in the mouth or in the stomach. Rather than being an antiseptic, the chemical agency of the saliva and the gastric secretions, induce fermentative and digestive processes, which are necessary for lacteal absorption and blood nutrition. In healthy digestive, intestinal, renal, and urinal processes, the saliva and human food products contain only enough of antiseptic agencies to retard putrefaction during digestion and alimentation. After excretion active putrefaction and decay result, showing the presence of not any pronounced antiseptic properties, neither in the salivary nor gastric juices.

An antiseptic saliva would retard the fermentative processes and delay or hinder digestion. Digestion and alimentation are necessary for nutrition and precede putrefaction. Antiseptic salivary and gastric juices which would hinder digestive fermentation and consequent putrefaction would soon exterminate the human race. All human saliva has very attenuated antiseptic agencies, so diluted as to produce but slight antisepsis during the alimentary process. It may be so concentrated by careful evaporation, however, that its neutral salt-acid and alkaline agency, will become decidedly antiseptic and also deadly germicidal, as will hereafter be shown in this discussion.

Potassium Sulphocyanid. This chemical does not obtain in sufficient percentage in the human saliva to have more than a temporary deterrent antisepsis during the fermentative and digestive processes, preparatory to alimentation, excretion and active putrefaction. This agency in high concentration, however, would be destructive to tooth structure.

Dr. Kirk advocates Miller and Black's "Lactic Acid Theories

of Decay," as is shown in the following quotation:—See July, 1910, *Cosmos,* page 731, as follows.

"That tooth decay is the result of the activities of certain bacterial ferments, acting upon carbohydrate pabulum in such a way as to convert it into lactic acid, which decalcifies the hard structure of the tooth."

In the following paragraph Dr. Kirk further writes:

"It is known also as the result of investigation, particularly by Miller and Black, that lactic acid ferment germs exist in the mouths of caries immunes to practically the same degree that they are found in the mouths of those who are susceptible to caries."

Dr. G. V. Black also advocates that tooth decay is a lactic acid decomposition. See Black's Operative Dentistry, Vol. 1, page 65, which reads as follows:

"Caries in its simplest expression consists in a chemical dissolution of the calcium salts of the tooth by lactic acid, followed by the decomposition of the organic matrix."

It is shown, therefore, that the three, Kirk, Black and Miller, are strong advocates of the micro-organic or lactic acid theory of decay. They, however, make no classification of the various chemical processes, which causes the different physical and shade charateristis of tooth decomposition.

Drs. Black, Kirk and Miller also advocate that the reaction of the oral fluids is most always alkaline. Kirk states, page 734, July, 1910, *Cosmos,* as follows:

"While a neutral or slightly alkaline reaction may be taken as narmal to healthy saliva, it is certain that where the saliva is mucoid in character, is viscid and holds much mucin, such a saliva is always alkaline in reaction."

Same paragraph he further adds:—

"My own observation of the many cases, as they are examined at our college clinic, leads me to the conclusion that the most active expression of caries is to be found in mouths having an alkaline and highly mucoid saliva."

And further, same paragraph:—

"We rarely find active caries in mouths having a thin limpid saliva of acid reaction."

Dr. J. Leon Williams, London, England, in discussing Dr. Kirk's

paper under consideration, in note, page 753, July, 1910, *Cosmos,* states:—

"Dr. Kirk's statement that observations conducted at his college clinic, convinces him that the most active expression of caries occurs in mouths where there is an alkaline reaction, reminds me of several conformitory facts."

Said note concludes:—

"Goadby, in his book on the 'Cycology of the Mouth,' quotes an observation of mine on the fine dentures of the Sicilians, who work in the lemon orchards of Sicily, and who are greatly addicted to munching the very acid lemons of the beautiful island."

The foregoing quotations show conclusively that William, Black, Miller and Kirk (for Kirk quotes Black and Miller), state that the human saliva is generally alkaline in character and that decay of the teeth is most apt to occur, and proceeds most rapidly in mouths having mucoid saliva, with consequent alkalinity. Also that carious decomposition is rarely found in mouths having limpid saliva of acid reaction.

If the human saliva generally has an alkaline reaction, and with alkaline characteristics, the writer of this paper is unable to comprehend how lactic acid decay or any other kind of acid decay can proceed in mouths which have alkaline salivary secretions. It must be borne in mind, that the potassium element in the human saliva has quite as strong a chemical affinity for tooth structure as lactic acid. Furthermore that the potassium element either free or combined as a neutral salt, is always present in the salivary secretion. Lactic acid is not.

Lactic acid cannot exist in the mouth in a free state when the saliva is alkaline, for the reason that the acid and alkaline agencies would chemically unite, neutralize each other, and form neutral salts. Unless there is an over-abundance of either acid or alkali, the saliva will be neutral. That Dr. Kirk observes that an alkaline saliva will neutralize lactic and other acids is shown by the following quotation. See July, 1910, *Cosmos,* paper under discussion, contains in part:—

"But that the addition of saliva prevents the destructive action and that the saliva therefore exerts a protective influence against the destructive effect of dilute acids on the enamel."

Experiment. Take in small glass graduates several two-ounce

quantities of human saliva from different mouths. Test each for alkaline and acid reaction. Those which are found to have a strong alkaline reaction will soon neutralize several drops of full strength lactic acid. Those samples which contain but slight alkaline tendency will neutralize less accordingly. One or two drops of lactic acid added to two fluid ounces of neutral saliva, will instantly indicate an acid reaction. An alkaline saliva will neutralize lactic acid and other acids until chemical equivalence obtains. More or less acid will be required for neutralization according to the degree of alkalinity.

According to the foregoing quotations from these very able men of the profession, it can be readily seen that the formation of lactic acid in the mouth in such small percentages as must result in oral fermentation, that the said acid would retard, rather than cause decay in human teeth, by combining with the potassium and other alkaline agencies, hence neutralizing them, thereby hindering the caries process. These gentlemen it seems, have never observed, at least they do not seem to acknowledge, that the alkaline agencies in the saliva have a chemical tendency for tooth structure, quite as strong as lactic acid. Futhermore, these alkaline characteristics are always present in the saliva and a necessary part of it. Thorough scientific investigation will show that the alkaline agencies in the salivary secretions, either free or combined, and because of a general alkalinity in this fluid, as admitted by Dr. Kirk, are more destructive to tooth structure than the various acids which may be found in the mouth.

The potassium element, either free or combined, has a strong affinity for tooth structure. The writer has made many tests with potassium hydrate in chemical equivalence. The latter is very active in lime salt decomposition. Said element and its neutral salt compound in the saliva will be neutralized by lactic acid, whether taken in the food as medicine or condiments. The same may be said of other acids, such as phosphoric, citric and malic. The bacterial ferments in the lactic acids which they produce, if they excrete any at all, would therefore retard and hinder instead of being an agency of decomposition. Witness the very fine dentures of the Sicilians (See Williams' quotation), because of their munching the acid lemons, thus avoiding an alkaline saliva more destructive to tooth structure.

It should be kept in mind that should lactic acid form in the mouth, as a part of its general composition or be excreted as a bacterial ferment in, about or under salivary plaques, that the alkaline plaque itself would have a tendency to neutralize the same, and hinder its destructive tendency on the teeth. Furthermore, that lactic acid has a stronger affinity for the potassium element in the neutral salt of the saliva than said element has for the salt molecule with which it is in chemical combination: hence the potassium will liberate and enter into a new combination, forming potassium lactate, potassium phosphate according to acid concerned, thereby neutralizing the stronger acids and retard the action of said acids on the lime salts. It must further be understood that either the alkaline or the acid agencies, free and uncombined in the human saliva are more destructive to tooth structure than in the neutral salt condition, but that the neutral salt agencies in the oral cavity, if in sufficient strength, will readily decompose human teeth. Keller's paper on "Caries and Erosion" fully explains and classifies the different decay characteristics, such as neutral salt, neutral salt-acid, and neutral salt-alkaline caries.

Same as observed by the very able men, quoted in this paper, the writer has also observed after many tests, that the human saliva is generally alkaline and mucoid in character. Same as they, he has also observed that decay proceeds most rapidly in mouths with saliva having the alkaline characteristics. And still further, that decay is less apt to proceed in mouths showing neutral or acid reaction.

Instead of caries being caused by lactic acid decomposition of the lime salts of the tooth, it is caused by the neutral salt, neutral salt-acid, and neutral salt-alkaline agencies in the saliva, or some combination of these various agencies. See chemical actions, reactions, and double reactions and specific causes, Keller's paper on "Caries and Erosion in Human Teeth," which will be published in serial numbers in this Journal beginning next issue.

There is but little, even of direct logic in the lactic acid theory of decay. There is absolutely no constructive logic, no inductive philosophy, no reasoning from cause to effect, no showing that lactic acid decomposition would produce the three specific different kinds of decay which occur in human teeth, such as the white decay, the gray or brown ash-like decay, and the semi-translucent or half opaque decay. Lactic and other acids will produce but one kind of caries, hence it may be

inferred with good reason and sound logic, that they do not produce all of the different decay, characteristics found in the oral cavity. Furthermore, Miller, Black, Kirk nor Williams, have shown that lactic acid obtains in the mouth in sufficient percentages as to neutralize the alkaline tendencies of the saliva, with an over abundance sufficient after said neutralization to decompose the lime salts of the tooth. There is no question but that lactic acid, if in sufficient strength, will rot tooth structure. Furthermore that fermented processes outside of the mouth may form lactic acid, in sufficient quantity and strength, as to destroy the teeth, but no attempt has been made to show that bacterial ferment lactic acid product takes place in the mouth in sufficient quantities and strength as to produce decay. At best but a few grains of digestive ferment can be retained on the teeth between them or in their cavities, quantities insufficient to ferment enough lactic acid to decompose lime salts of tooth structure.

DISCOVERING CARIES CAUSES, means original classified research. It is well known that some acids and alkalies will destroy tooth structure by chemical decomposition. It is also known that some will not. Original classified research investigation will ascertain by experimentation the various kinds of vegetable and mineral acids which will decompose the lime salts of human teeth. It will also determine by experimentation the alkaline elements or substances which will destroy tooth bone. After the research man has ascertained these acid and alkaline agencies, which respectively disintegrate human teeth, he will then proceed to combine these acids and alkalies as neutral salts as found in the salivary secretions. He will then ascertain, if in different strength these neutral salts will break down tooth structure. If his scientific investigations ascertain that the neutral salt agencies, chemical union of the various acids and alkalies, will also decompose the teeth he will note such facts and then proceed to classify these agencies of chemical decomposition. He will find that decay caused by excess acidity will be invariably white and soft in physical characteristics, and may be known as the neutral salt-acid decay. Excess alkalinity will cause dark brown or ash-like color decay and may be known as neutral salt-alkaline decomposition. Neutral salt decay, as produced by double chemical reaction, say with potassium lactate or potassium phosphate in neutral chemical equivalence

and as a neutral salt will be neutral in color, semi-opaque, dead-like, but most frequently with unbroken organic matrix.

After classified research work, has determined the various excess acids, alkalies and neutral salt agencies which break down tooth structure, it is then necessary to find whether these decomposing factors are present in the salivary secretions. If they are found to be present, then the logical conclusion would be that they are the agencies of destruction, if in sufficient strength and time.

So far as the writer has been able to determine, no attempt heretofore has ever been made to classify the agencies of tooth decomposition. Had such endeavors been successfully made, such errors as lactic acid decay in alkaline mouths would not be in dental literature.

A classification of these agencies of disintegration, will train the mind so as to make such errors outside the plane of possibility. Black and Miller frequently fall into this mistake. Classified research work determine facts and has nothing to do with beliefs or opinions. In Dr. Kirk's paper under discussion, July, 1910, *Cosmos*, pages 729-739, six pages in all contains such phrases as, "I believe," "I question," "It seems clear," "I think," "I have wondered," "holding to the same view," "I regard," etc., about twenty times. Original classified research work determines facts and has nothing to do with beliefs and opinions. When classified facts are obtained as to the various agencies which may cause carious decomposition, then logical conditions and experimentation will determine whether said agencies do the work of disintegration.

In some forty pages of Keller's paper on Caries and Erosion such phrases as "I believe," "my opinion," forms no part of it. We want ascertained scientific facts, not beliefs and opinions.

SALIVARY PLAQUES. Much is said in Kirk's paper about mucin and bacterial plaques. No question but that they form in the mouth and attach to the teeth. No question but that they are most always accompanied with or contain many bacteria, which may culture under, in or about them. As there are so many different notions and opinions as to the cause of plaque formation, the writer will devote a few paragraphs to this question.

Keller in his paper on Caries and Erosion ascribes concentrated saliva or salivary plaques to be caused by respiratory evaporation, but that it may be partly caused by other agencies. Kirk advocates that

lactic acid in the saliva itself precipitates and fixes the bacterial or gelantinous plaque. See page 735, July, 1910, Cosmos, first paragraph, in which he says that lactic acid "will cause precipitation of the mucin as a coagulum of film," and in second paragraph following says, "Assuming then, a lactic acid bacterium temporarily fallen upon a protected area of tooth structure in a culture media." It will, therefore, be seen that Dr. Kirk contradicts himself by stating that plaque formations are lactic acid precipitations, but he elsewhere indicates as will be seen from his quotations, that the lactic acid bacteria culture in or under them and excrete the lactic acid which decomposes the lime salts of the tooth. It will, therefore, be seen that it is advocated that lactic acid precipitates and forms the plaque in which lactic acid germs culture and excretes lactic acid which rots the teeth.

Dr. J. Leon Williams of London, England, in discussing Kirk's paper in question, page 761, July, 1910, *Cosmos,* gets the microbic cultures in and under the bacterial plaque. In said page, second column, first paragraph, he states:

"My own contribution to the solution of the problem was in the demonstration I was able to give of the universal presence of a bacterial plaque, containing among other forms of micro-organisms the lactic acid bacillus. I showed everywhere beneath these bacterial plaques the enamel was being acted upon by an acid which eventually completely destroyed it."

It will therefore be seen that Williams gets the microbic cultures in and under the salivary plaque and not in the saliva.

Dr. G. V. I. Brown, in discussing said paper, July, 1910, *Cosmos,* page 765, column 1, paragraph 1, states:

"This Dr. Kirk seems to have given us when he explains for the first time the possibility of mucin precipitated by the omnipresent lactic acid, serving to bind the lactic acid producing bacteria in an agglutinized mass against the tooth surface. They get the lactic acid everywhere, both in the salivary secretions so as to precipitate and form the bacterial plaque and then get the lactic acid producing germs under the plaque and against the tooth structure, so as to destroy it.

These gentlemen express all sorts of opinions and notions as to salivary plaques, their formations and microbic cultures in, about, under them and in the saliva. They advocate that an alkaline salivary plaque is a lactic acid precipitation, knowing that an alkaline saliva

would neutralize lactic acid. Further, that the alkaline salivary plaque contains the lactic acid bacillus, which forms and excretes lactic acid under the plaque and adjacent to the tooth and decays tooth structure. Some of these writers claim that lactic acid is an excreted product. Others think that one molecule of sugar by fermentative decomposition, will break up into and form two molecules of lactic acid. Black advocates that the bacillus streptococcus excretes lactic acid. Kirk advocates that lactic acid in the saliva precipitates the plaque in which the bacillus streptococcus cultures and excretes more lactic acid. These inconsistencies will be further considered.

July, 1910, *Cosmos,* page 736, column 2, first paragraph, Dr. Kirk contains:

"As one of the important, and I believe it would be the direct means of localization of the decay process in caries susceptibles, the precipitation of mucin by the secreted lactic acid appears to be a prominent factor."

In the foregoing quotation Dr. Kirk would indicate the culture of the lactic acid bacillus under a salivary plaque, necessary to excrete lactic acid which would have to become a part of the salivary body in order to precipitate more mucin, more plaque formation, that more lactic acid might be excreted so as to destroy tooth structure. If these gentlemen would advocate, that the staphylococcus germ excretes the element potassium and at the same time that the streptococcus excretes lactic acid and then show the same to be scientific facts, then they might have some logical ground upon which to base their micro-organic processes of decay. Unless they can do thus these micro-organic theories become microbic errors.

LACTIC ACID DECOMPOSITION. Page 735, July, 1910, *Cosmos,* column 2, paragraph 2, Dr. Kirk states as follows:

"Joseph Head, in the report of his experiments with highly diluted acids in their effect upon enamel, states that so extreme an attenuation of lactic acid as one part in twenty thousand of water will visibly etch enamel in the course of some hours."

The writer has computed by mathematical chemistry and chemical equivalence that such a solution of lactic acid would not break down nor etch tooth structure during a period of 1,300 years.

Appended to Dr. Kirk's paper July, 1910, *Cosmos,* is the following note:

"NOTE. Since the above was written the experimental production of the bacterial plaque has been successfully accomplished in the laboratory, by innoculating with caries fungi a pabulum consisting of glucose and salivary mucin made alkaline with dibasic sodium phosphate, the whole colored with blue litmus. Precipitation of all the mucin as a large plaque took place by action of the acid resulting from the fermentation, and the final reaction of the medium became acid, as shown by the reddening of the dissolved litmus extract."

According to the paper foregoing this note, Dr. Kirk states that salivary mucin is always alkaline, but in this note he states that he makes it alkaline with dibasic sodium phosphate. The writer is curious to know how Dr. Kirk can make an already alkaline salivary mucin, alkalin with dibasic sodium phosphate. Said phosphate always shows acid reaction, because of its changeable characteristics and feeble chemical union.

ALL HUMAN SALIVA CONTAINS WITHIN ITSELF CHEMICAL AGENCIES OF TOOTH DECOMPOSITION. NO MICRO-ORGANIC ACID DECAY IN IT.

PROVING EXPERIMENT. Human saliva contains within its own chemical composition all the agencies of decay which produce the different decomposed characteristics found in caries. No microbic agencies are concerned in it. The following experiment will convince any reasoning mind of the truth of the foregoing proposition. The experiment is as follows:

Take a one pint porcelain or granite vessel. Set this granite vessel in a larger sized vessel holding one gallon or more of water. Fill the outer vessel with water near to the depth of the granite cup set in it. Pour into the one pint granite cup, eight ounces of human saliva. Set the whole over a gas burner, and bring the larger vessel to a boiling temperature, which maintain until the saliva has been evaporated to about two ounces. Then add eight ounces more of saliva and evaporate again until reduced to two ounces, and so on, adding saliva, four to eight ounces at a time, until there has been added in all about sixty ounces of human spit, and reduced by evaporation to about two fluid ounces all told. The saliva in the small granite cup will not raise in temperature to exceed 200 deg. fahr.

The evaporated solution of saliva will in most all cases be alka-

line. It is seldom that a mouth can be found with saliva having acidity enough to make such an evaporated solution with an acid reaction. In most cases the alkalinity will be so strong as to turn red litmus to blue, immediately.

Place in the two-ounce solution of evaporated saliva two or three human teeth, bottle, cork and allow to stand in a room at ordinary temperature from one to two years. Keep tightly corked. Open at intervals of a month or two and examine the action of the saliva upon the tooth structure. It will first decompose parts with most faulty and least development. Decay will proceed along lines of least resistance. The cementum will be first effected, then the apex of the root and lastly the dentin and enamel.

This concentrated salivary solution will be strongly antiseptic and deadly germicidal. The mucin, coagulum, and other salivary debris left in it will be preserved because of the strong potassium and alkaline antisepsis. Because of the impossibility of micro-organic life to develop in it and certain death to all that may be present during the evaporation process at about 200 deg. Fahr. there will be found no possible means for lactic acid microbic cultures in it.

This experiment shows most conclusively and without doubt that the saliva contains within itself the chemical elements of tooth disintegration. No microbic decay in it. The chemical formula of saliva alone, even without this experiment will plainly show to a sound, logical, chemical mind that the statements herein are true. The writer has made several test solutions accordingly. In no case has he found that it will take longer than six months for the concentrated test solution to destroy the cementum. Next the apex of the roots will begin to soften and rot, and so on, continuing until within the course of a year or two, according to the strength of the test solution, the entire tooth will be destroyed.

This proving experiment shows beyond possibility of dispute that Black's and Miller's micro-organic theories of decay are microbic errors. It will take but a few years' time for an investigator to make this test and thereby become convinced, beyond all doubt of the truth of the scientific facts herein stated. And he will then be able to settle in his own mind and satisfaction the solution of this historic problem.

Appropriates Keller's thunder without giving credit. July, 1910,

Cosmos, page 734, concluding sentence of last paragraph, Dr. Kirk says:

"In the same way we may account for the hypertrophied condition of the buccal glands so frequently observed in the texture of the labial mucous membrane in those individuals suffering from chemical erosion of the front teeth."

Please note that above quotation suggests or ascribes erosion to some chemical agency of the labial secretions. These chemical actions and re-actions must be either a neutral salt, either with or without an accompanying acidity or alkalinity. They are the only chemical agencies which could destroy the teeth that are found in any or all of the labial, lingual, or buccal products in all human salivas. But Dr. G. V. Black in his *Operative Dentistry,* Vol. 1, page 49, says:

"The cause of erosion of the teeth is involved in the utmost obscurity."

Kirk is right. Keller has advocated that zinc phosphate cements, calcium phosphates and carbonates of enamel, dentin, cementum and alveolar process, are decomposed by some of the various neutral salts found in the saliva, assisted generally by excess acidity or alkalinity. Chemical agencies which will destroy the teeth are as abundant in buccal and lingual salivas as in the labial mucus or saliva. They may be of different classes but effect chemical decomposition. Keller shows that the same classes, but may be different kinds, of chemical agencies of said classes, destroy the above anatomical parts in such conditions, or diseases as disintegration, caries, erosion, abrasion and pyorrhoea.

The advocates of Miller and Black's micro-organic theories of decay can find no excuse for the lodgment of lactic acid bacillus cultures on the labial surfaces of the teeth, hence they ascribe erosion to some sort of chemical agency.

WORK BASIS OF FEE.

I do not think that any of us get any more than we should, provided the work is right, and the fee an honest one. Dr. Good would have us infer that no matter what we charge, we are entitled to it. I see operations every day, and doubtless you do, that make me feel that it is a shame "to take the money." Our work should guide us largely in the making of our fee. We all have failures, and if we

put a fancy price on work we know is not perfect, we are going into the pocket of our patient and are taking what we should not take. If we can do the work, then we can also charge for it.

D. M. GALLIE.

THE ETERNAL QUESTION OF FEES.

There is a principle at stake here which every one should recognize. I feel that each one should know for himself what his time and his services are worth, and that we should seek to enlighten our patients in this regard. As a rule, we are apt to gauge the value of our services by what we can get. For instance, a young practitioner may not feel that his services would bring as much as one who has been in practice for twenty years, or longer. It seems to me that the simplest way of getting at the point is for each one to determine for himself what he is willing to work for—the sum that a day's labor ought to yield—and, having determined that point, let us gauge our fees accordingly. I am perfectly willing to work on that basis. I believe we can work with much more justice to ourselves and to our patients if we make a definite charge for the time the service occupies; the cost of the material used should not be specially considered (except in artificial dentures), as it is very trifling compared with the fees charged.

DR. ALLEN.

FEES DEPEND ON HONESTY.

I do not believe that there is a business, a specialty, or a profession, or any occupation in the world, that requires so much uprightness and force of character to stand on the top plane of possibility as the dental profession, and there is no man living, outside of the operator himself, who can properly say what his fee should be. There is no other man that knows the circumstances, and when we come to gauge and to determine the fees for dental operations by any fixed law, or by any analogy of reasoning, I do not believe it is possible to equitably do it. Some time ago I went to a physician to pay a bill, and at the same time I was in his office I was troubled with a slight affection of the throat. He is one of our foremost practitioners here in the city, and I asked him to look at my throat. I stepped into the light and opened my mouth. He looked into my throat and said, "Humph!" then turned and wrote a prescription, and handed it to me. The whole

thing did not exceed one minute and a half, and his fee was three dollars. Now, I did not pay him for the time he occupied in looking into my throat and writing the paper—I paid him for his twenty-five years' experience. And, to my mind, he gave me greater service in that minute and a half than many another man would after studying my case an hour. It depends largely on one's own personal experience and conscientious application to the question of fees, as well as to means and methods of work. DR. CLAPP.

DECIDE FOR YOURSELF.

The benefit of organization grows upon us as we become more familiar with its advantages, both social and professional. The frequent exchange of ideas has a tendency toward broadening our horizon and keeping us well in front. While we have been successful in the filling of root canals and other operations within our province, yet the investigators are continually at work in an effort to make these operations more perfect. The question of fees, as regulated by a stated rule, is a perplexing one, as each person must decide that for himself, being governed by the peculiarities of his practice, environment, ability, *clientele,* financial status of patients, etc. The temperament of a patient is a very important factor to consider, as upon its proper reading depends much of your success and the rapidity with which your work can be carried on to a successful conclusion. The profession of dentistry keeps the operator at a high tension and he must always have himself well in hand to inspire his patient with confidence.

Different men have varying ideas as to a commensurate fee for the operation and time, and I believe each man should be the best judge as to the fee to be charged, according to the conditions surrounding him, but we are very frequently asked what we charge for an operation or piece of mechanical work and must needs give a definite reply. I do not agree with the essayist on what he chooses to call "the clock system," and neither do I feel that by making a specific charge by the hour you are reduced to the level of the day laborer, albeit the laborer's work is figured on that basis. There is a marked distinction between a man getting twenty-five cents an hour wheeling out ashes and a dentist charging five or ten dollars an hour for the filling of a root canal; the difference in the degree of intelligence required for the two classes of work is apparent to any one and

should need no further explanation. Many people find it necessary to inquire the approximate cost before beginning the work.

GEORGE B. PERRY.

BELIEVES IN HIGHER COMPENSATION.

The aim of my life has been to become a good dentist and charge as big a fee as I can get. I think we are entirely too timid when patients come to us complaining about work done by another dentist. Naturally, they say the work was not done very well, or that they paid too much for it, and most of us are too timid to charge more for better work.

Another point we must be careful about, and that is, when a patient speaks about a very high fee having been received by some other dentist. Do not belittle that fee. Say that the man's position and that of his patient justified the fee. If possible, show your patient the difference between kinds of work that may be done by various men. Every time one dentist charges fifty dollars for a crown he makes it possible for every one of you to get five or ten dollars more for your crown. You are not only helping him, but yourself.

W. H. TAGGART.

There is no question that we do not get fees commensurate with the amount of work, intelligence and *personal* service we put into our dental practice. There are some men in this city who, by reason of their wealthy clientele, can demand large fees and get them. There are others, also, who have not such a wealthy following, who can not charge enormous fees, for the simple reason their patients can not pay them. Again, there is the great class of young men constantly coming into the profession who must feel their way until they reach a place in their calling and experience that will justify them in asking large fees. They must be conservative and use a discriminating judgment. We should, by all means, uphold and encourage every good man who commands large fees. Such men make it possible for the rest of us to be better paid. Drs. W. W. Allport, J. N. Crouse and others have done much good in this direction in this community. We should encourage instead of decrying such men whenever the opportunity affords. But here is the other side: Why is it that two men, equally endowed technically, equal socially, starting alike, differ so widely as to their success? One is able to command tremendous fees and gets

them; the other is only able to eke out a miserable existence. There is a plus besides the technical efficiency that accounts for this difference. It is personality. Most men can in time master the technique of any profession—also, they can acquire an attractive personality.

What is personality? It is the sum total of all things of life assimilated; if we value the vicious things of life personality reflects it; if we value and patronize the good things of life, personality reflects it. The association of cultured, refined people, the reading of good books, the tenderness and gentleness of manner, the kindness, the sense of justice, all are tributaries of and contribute to personality. Personality is either constantly being added to or taken from. These forces are making or unmaking personality.

This personality, when applied to a special technical calling, sheds upon it its full force of accumulation and gives to it a distinct character that sooner or later counts. C. E. BENTLEY.

REMUNERATION FOR DENTAL SERVICES.

A very general opinion seems to prevail among dentists that in proportion to the amount of time employed, and skill demanded, in the performance of dental operations the profession receives the poorest remuneration of any of the liberal professions. From personal observation and practical experience we are inclined to believe that there is good ground for the establishment of this belief, but at the same time we are also led to ask, "Who is to blame for this state of affairs?"

Is it owing to the fact that dentistry, being of humble origin, is so innately modest as to be continually unable to place a fair valuation on services rendered suffering humanity?

Is it owing to the fact that dentistry, being of humble origin, is it because someone has established a foolish precedent and no one is able to overrule it? Is it because the service rendered is really worth no more than is asked? Is it because the public does not place a sufficient value on good teeth, or know how essential a part of the human economy they are?

We are inclined to believe it is not for any *one* of these reasons that dentists receive poor pay for their services, but because of all of them, and a few others we have not mentioned. We feel that dentistry, though of humble origin, has rendered a service to humanity fully equal to that rendered by any other profession, and has enrolled

among its members the names of as heroic, unselfish, scientific, skillful men as grace the pages of the history of human achievement. Yet with such a record, it is possible that dentists themselves, as a rule, do not grasp the full meaning of the *value* of their services and never have imparted to their patients a proper appreciation of them. The public will pay any price for anything which is popular, or fashionable, or which it feels is essential to its health and happiness. But no one has really made good, sound, clean teeth, "Popular or fashionable," or taught universally that they are "essential to health and happiness."

Because some members of the profession are willing to work for a fee entirely inadequate to the service performed, it certainly is not essential that others should do so.

In many cases we are reluctantly led to believe that the service is worth no more than is asked for it, and in others not even as much.

We once said, in reply to the question, "What is the chief cause of the failure of amalgam fillings?" that it was "one dollar and a half." This answer will apply to many other operations for which the fee demanded is so small as not to permit the operator to take time to do his best. But whatever cause we may assign to the prevailing low fees for dental services, we cannot feel that any one is to blame but the dentists themselves.

They do not properly appreciate the values of their services to humanity, and do not teach their patients the value of their teeth or how essential they are to health, and beauty, and happiness, or with what comparative ease they may be preserved.

It has been and still is too easy to become a dentist. Standards are being advanced, it is true, but college fees are still too low, and too many insufficiently educated men are still allowed to study and graduate. It is time for reform, and if the profession is ever to receive a proper remuneration for its services, it must first be impressed with an appreciation of its own intrinsic worth, the necessity for weeding out its unworthy members, and for educating the public up to a realization of the true value of their teeth and the necessity for preserving *all* of them as long as possible; and also that the promotion of good digestion, the establishment or retention of a pleasing personal appearance, the preservation of good health and the prolongation of life are not properly to be measured in value by dollars and cents.

J. L. PLATT

JOURNALISTIC GEMS.

THE TOOTH TINKERS.

BY ROY L. McCARDELL.

Author of "The Conversations of a Chorus Girl," "The Jarr Family," etc.

Being a reprint from Hampton's Magazine, Sept., 1910.

[EDITORIAL NOTE.—"Painless Parkers" have been extracting perfectly good teeth—and money—from gullible persons all over this country by promising cheap, "painless" dentistry. You have seen their flamboyant signs and you will recognize the Red-coated "capper" described in this article. Mr. McCardell answers your question, "Is it really painless?" And he shows you how many have suffered before they found the answer.]

When I was one-and-twenty, I heard a wise man say:

"Don't trust men with whiskers."

"Remember that men who play the piano are no good; the better they play it, the worse they are."

"Never patronize a place that advertises with sandwich men."

If Mrs. Gabb, of Brooklyn—Mrs. John Gabb, 4994 Pineapple Street, a two-family house with the Browns, a nice quiet family, nine children and twins, on the other side—if Mrs. Gabb, of Brooklyn, had heard all these things when she was one-and-twenty, she would not have permitted a "growling" tooth and a very fat negro in a crimson coat and a high hat, to inveigle her into Yanks' Dental Parlors, in the heart of the shopping district, on Sixth Avenue, New York City, where the gold-lettered ad. on the back of the red-coated man read something like this:

EXAMINATIONS POSITIVELY FREE

TEETH EXTRACTED WITHOUT PAIN.

Gold Fillings, $1; *Porcelain,* 50 *cents; Full Set of Teeth,* $5.

Now Mrs. Gabb, like many another woman or man, compelled to economize in every direction, dreaded the prospect of a trip to the perfectly reputable dentists whom pleased patrons of her acquaintance vouched for. She had been a visitor to one of these reputable practitioners the preceding year, and Mr. Gabb had been horrified at the

resultant bill of $32.50 for professional services. Hence Mrs. Gabb paused in front of the Yanks' establishment, and rubbed her cheek.

The cunning coon in the cardinal coat observed that this was the psychological moment to draw in the net.

"Tooth hurt you, lady?" he inquired. "Better step right upstairs and have the boss look at it. You don't know what harm you are doing yourself, lady, if you let dat 'ere obstreperous tooth hurt you too long. Doan' cost nothing at all just to have him look at it."

Mrs. Gabb hesitated. "I believe I will," she said, half to herself. "I promised to meet Mrs. Kittingly at three o'clock, and it's only half past two now."

And as Mrs. Gabb started into the hallway, the red-coated porter obsequiously opened the downstairs door for her, at the same time pressing a button, unobserved by her, which rang a buzzer in the parlors above.

THE STAGE SET IN A BARGAIN DENTIST'S.

At the head of the stairs, a neat maid had already opened the door of the Yanks' reception room, for like most of these shyster dental parlors, the Yanks' establishment catered especially to women, and the neatly attired maid was calculated to inspire confidence as to the character of the office. Inside, a blond cashier behind a little desk, right at the door, smiled at Mrs. Gabb, and motioned her to the "doctor," a smartly dressed young man with a pointed, Vandyke beard.

"Good afternoon, madam," began the doctor, who seemed to be the person referred to as "the boss," waving her to an operating chair in the next room, in which half a dozen chairs were arranged conspicuously before the imposing array of windows, while three or four helpers in white duck coats moved silently to and fro, and several patients in various chairs alternately shuddered and then gave vent to subdued groans as probes and drills were plunged and ground into aching cavities.

"I just wanted to know," began Mrs. Gabb——

"Of course you want to know what condition your teeth are in," volunteered the contractor, as he is known, breezily. "That is what we are here for, madam. Pray let me look at your mouth. Lean back, that's better. H-m-m! Oh, that's too bad, isn't it? And you so young. I never saw a tooth in such a condition in so young a woman before."

Mrs. Gabb sat up, astounded. "What?" she demanded, in amazement.

"Pray don't let me alarm you, madam," continued the contractor, shaking his head doubtfully. "That is one thing Dr. Yanks never permits us to do. But I frankly confess I wish the doctor were here himself to look at your mouth. Unfortunately, Dr. Yanks is cruising on his yacht to the Bermudas—prostration—overwork—does all society's dentistry, you know, and will not be here until Friday. But before I dare venture an opinion about saving those last three teeth, I must ask the advice of our head dental surgeon. Oh, Dr. Gumm, will you look here a moment?"

(It may be mentioned here, in parenthesis that "Dr. Yanks," or "Prof. Puller," or "Painless Parker," or whatever man whose confidence-inspiring name the "dental parlor" or "association" is conducted under, is never in—but "our chief dental surgeon" or "our head expert" always is.)

At the call, one of the white-coated young men, more pompous and with a heavier Vandyke beard, came forward with suave dignity.

"Doctor, I wish you'd take a look at this lady's three anterior bicuspids," said the contractor. The pompous young man looks and is plainly impressed.

"I'm sorry Dr. Yanks isn't here, for I am sure he'd like to get a look at such an unusual formation, something we rarely encounter, I can assure you, madam," he said. "However, it was my good fortune to handle two cases greatly similar at the International Dental Clinic in Vienna, a year ago," he added reassuringly, "and I will personally superintend your treatment."

Mrs. Gabb didn't know whether to flee or to submit, but fear and doubt and glib pomposity conquered. So she leaned back in the chair while the pompous young man plunged his forceps into her mouth and gazed curiously into the aperture.

"Most unusual, most unusual," repeated Dr. Gumm, regretfully. "I should say all three teeth would have to come out, and be replaced by a bridge, to prevent your cheek from falling in. That, you know, would destroy your natural beauty—not today, or tomorrow, of course, but inevitably, unless you have skilled and scientific treatment in time."

"Really?" gasped Mrs. Gabb. "I had my teeth looked at a year ago, and my dentist didn't say a word about losing those three then."

"Ah! the operation will be a most difficult one," responded the contractor, as Dr. Gumm withdrew, shaking his head. "Many dentists would hesitate to perform it, and would much prefer to simply fill these three teeth, although the fillings might not hold and you would then be worse off than ever. Now, I will continue the examination, and you can decide, of course, for yourself just what you want done. Remember, the examination is entirely free. That, now that the great Dr. Gumm has so thoroughly diagnosed your case, I can do. But Dr. Gumm will treat you—that shall be specified. Do not betray my confidence, but Dr. Gumm leads his profession. Foreign dentists cross the Atlantic to consult him. Dr. Yanks himself admits he is a tyro compared to Dr. Gumm. And his prices are so reasonable. He is interested in the work, not the money."

Thus reassuring the patient, who was obviously becoming frightened at the possibility of a tremendous bill for expert dentistry, the contractor continued to pound and jar every tooth left in Mrs. Gabb's mouth, meanwhile keeping up a running fire of comment and inquiry. Drawing the unsuspecting lady out, he learned, for instance, that Mr. Gabb occupied an excellent position at a fair salary as secretary of a mercantile company downtown.

This made certain the payment of any bills contracted by Mrs. Gabb, provided she could be induced to invest; and the only remaining feat to be performed was to induce the worthy lady to undertake a contract, according to her means. To find out what the visitor is able to pay, and to bind him or her to pay it, are the contractor's functions in a shyster dental parlor.

"I find you will need a bridge for the three teeth we will have to extract," finally declared the contractor, "and there are five rather large cavities and ten small ones which should be filled."

"And how much will that cost?" gasped Mrs. Gabb, once more on the verge of flight because of the probable expense.

"Our schedule of prices is so very low," replied the contractor, "and we allow easy time payments. You will not feel paying for this work, so vital to your health and appearance. By organization and co-operation we can employ the most skillful men in the profession, the most noted dental specialists, such as Dr. Gumm, and yet our

terms are so reasonable and our work so excellent and permanent, that I am sure we will not quarrel over the price. Besides, isn't it better to pay anything, in reason, rather than have your husband notice the hollowness of your cheeks when those three teeth drop out, as they will?"

"But," said Mrs. Gabb hesitatingly, "I must have some idea. My husband won't let me run up bills."

"Our system of crown and bridge work restores old roots and badly decayed teeth to their natural beauty at small cost," glibly went on the contractor. "Besides, you do not run up bills—you pay small sums as the work progresses. Let me see, the bridge, using the best quality of English gold, imported, will be $30, the five gold fillings will cost $25, and the ten small ones, which we must fill with platinum, because they are so small, will cost about $2 each—on easy payments by the visit, of course. Then, your teeth restored find our reasonable charges paid."

But you advertise a whole set of teeth for $5," protested Mrs. Gabb. "And your fillings are only 50 cents and $1, according to your announcements."

The contractor smiled at her ignorance. He always found that patients protested at first.

"That is speaking of cheap work for poor people," he said, with kind contempt for both that kind of work and those sort of people.

"If you want me to pull out all of your teeth, I can give you a complete set for $5," he added. "But why lose those beautiful front teeth when a little skill will save them? The bridge work is much more expensive than the crown work, and our porcelain fillings, at 50 cents, while perfectly good, turn black, so you wouldn't want anything except the platinum. Now, as the examination is through, I'd like to have Dr. Gumm, who will attend to you personally, mind, extract two of these back teeth so as to prepare for the bridge work. How much can you pay on account?"

Mrs. Gabb was impressed by the skill of the great Dr. Gumm placed at her disposal so cheaply, and bewildered at the disconcerting discovery that her good looks would be eternally marred unless her teeth received immediate treatment. As luck would have it, too, her aching tooth was one of the condemned molars and had been irritated by the examination. She nervously fumbled with her purse, and

then drew out the ten-dollar bill which she had intended to use on her shopping tour with Mrs. Kittingly.

"Only $10?" frowned the contractor. "We seldom undertake such an expensive job as yours promises to be without a deposit of at least $25. However," and he grabbed the ten, "as we prefer to cater to the better class of people at any price, I will give you a receipt on account, and you can pay the rest of your deposit on your next visit."

Mrs. Gabb watched her $10 fade away to the blond cashier, and pocketed her receipt without even looking at it. The tooth was aching worse than ever, and the good lady permitted the contractor to pass her on to Dr. Gumm, who, as she was told, would always personally treat her.

Mrs. Gabb was hardly out of one chair and into the other before she heard the buzzer ring, and Dr. Gumm thoughtfully placed a screen around her chair. A new visitor was received by the contractor, conducted to the chair she had just vacated, and examined. Mrs. Gabb was so worried by the injection of cocaine, and the nervous shock and pain of having two teeth pulled, that she couldn't hear all that the contractor said to the new visitor, but as she left the parlor, she thought she heard him remark:

"Ah! that is certainly a most remarkable condition, and one which I don't remember ever seeing before. Dr. Gumm, will you be good enough to look at this lady's mouth and tell me if you ever saw such an abnormal condition?"

If Mrs. Gabb had tarried a moment longer, she might have heard a diagnosis similar to her own, but the aching void in her mouth, where two perfectly good teeth had been but a few moments before, worried her and she didn't wait to listen.

All the way home to Brooklyn, her appointment with Mrs. Kittingly having been forgotten, Mrs. Gabb reflected that $10 was quite a lot of money to pay for the extraction of two teeth. The reputable dentist whom she knew would have pulled the aching molars for 50 cents each; but, on the other hand, she had paid the money "on account" for the bridge work which the contractor had assured her was necessary. Therefore, Mrs. Gabb said nothing to Mr. Gabb of the eventful vista before her of having the personal attention of the great Dr. Gumm, and paid her second visit to the Yanks' Dental Parlors three days later, according to appointment.

This time the negro porter grinned a welcome, the cashier nodded, and Dr. Gumm came forward with extended hand and a winning deference. It was apparent from his first words that he had been instructed to "raise the contract." In other words, to make Mrs. Gabb order more expensive work than she had at first contemplated.

THE "POORER-KIND-OF-FILLING" GAME.

"We'd better get on with the fillings this time," volunteered Dr. Gumm. "If we wait too long, the work will cost a great deal more, a thing we do not desire. Reasonable charges make a pleased patron, you know. Now, as to the kind of filling you want, my dear madam. We have gold filling, silver filling, platinum and gold alloy, and porcelain cement. The platinum and gold alloy is the best, but, of course, the most expensive. A woman of your position in life should have the best, and as your teeth have been sadly neglected and need great care and attention, I will see that you get a special price."

And he does, but it is extra special.

Mrs. Gabb listened as one hypnotized. Gradually the scale was explained to her. The porcelain fillings were the cheapest. The gold fillings would cost $8, and the platinum and gold alloy $15.

"But," protested Mrs. Gabb, "you advertised gold fillings at $1, and I was told on my first visit that the outside price would be $5."

"Ah! for ordinary cavities, yes," assented Dr. Gumm. "But have you any idea how large your cavities are? They are enormous—quite so large that we will have to be careful not to break the shells, and will have to use, in at least two cases, a specially patented apparatus and drills upon which we pay enormous royalties."

Mrs. Gabb allowed herself to be persuaded, and for about twenty minutes Dr. Gumm carved and scratched and ground in interested silence. After much preliminary work, the gold and platinum alloy was deposited in the void; but if Mrs. Gabb had watched carefully she would have seen that Dr. Gumm had only one bottle of filling material. No matter what name or price he quoted, the same filling went into the waiting teeth.

Each time the good lady visited the Yanks establishment, she paid. The receipt read "on account," and there was never any end to the account. The third visit, she was told that her gums had to be treated with "Coraline," because they were so hard, and this extra

treatment cost $3. When the bridge was ready to be fitted it did not suit because of the peculiar construction of her mouth, and another one of a more expensive nature had to be ordered. About three weeks after her first visit, Mrs. Gabbs noticed that the first tooth which had been filled was aching. During the day it became worse, so she made an extra visit to the Yanks establishment to find out why.

Dr. Gumm poked at the filling, found it was loose, and removed the gold and platinum alloy.

"Why," he said in amazement, "I cannot understand this at all. Undoubtedly the filling wouldn't stay in your mouth because your saliva is full of acid. Let me give you what we call the 'acid test' and see if I am correct."

Then Mrs. Gabb was subjected to the famous "acid test" which has figured in more than one prosecution of the fake dental parlors. A piece of litmus paper was cut into a strip about an inch wide and six inches long.

"Now this blue litmus paper will turn red when you put it in your mouth, if you have acid saliva," explained Dr. Gumm. Then dexterously manipulating the slip of paper, he moistened one end of it in a small bowl of diluted sulphuric acid, and held this end under the palm of his hand. The other end he injected into Mrs. Gabb's mouth, and asked her to moisten it. She did so, and after a moment he removed the paper, taking it quickly to the light, and reversing it as he did so. There, as plain as day, was one end of the blue litmus paper turned to red—just as anyone in a corner drug store can turn it red.

"Dear me!" he exclaimed sadly. "What a quantity of acid! I don't think even the gold and platinum alloy will stay in your teeth—we must use pure platinum prepared after a special process we have invented. This makes it expensive, but we can arrange the payments."

Mrs. Gabb was then persuaded to buy six bottles of an anti-acid mouth wash at a dollar a bottle, and she returned to Brooklyn in such a sad state of mind that she told her husband all about the three weeks' visit to the Yanks establishment.

Mr. Gabb promptly hit the ceiling, denounced the Yanks people as swindlers, looked at her receipts, made out a list of work done and money paid, and found that the good lady had expended $55 of his hard-earned money; in return for which two teeth had been pulled

(which any honest dentist would have saved), five cavities had been filled with ordinary silver amalgam filling tinctured with gold dust, and six bottles of worthless mouth wash had been imposed upon his spouse.

Being a sensible man of the world, Mr. Gabb promptly called on the Yanks dental establishment, demanded the return of the money that had been paid by his wife, and when that was refused, emphatically threatened to administer a severe beating to the contractor and to Dr. Gumm. The negro porter was just about to eject Mr. Gabb from the parlors, when the blond cashier called Mr. Gabb to one side and offered to settle for fifty cents on the dollar if Mr. Gabb would sign a release of all claims.

Being still sensible in spite of his wrath, and glad to get back half of the money thus wasted, Mr. Gabb compromised, collected, and departed.

THESE FAKE DENTISTS WORSE THAN SWINDLERS.

The experience of Mrs. Gabb is one of hundreds of actual cases on record. Every day there are Mrs. Gabbs going to these dangerous and unscrupulously conducted parlors, in every city in the land, in spite of the efforts of recognized dental societies in every state of the Union to suppress them as menaces to society. For not only are the majority of them swindling concerns, but owned or operated by reckless and inexperienced and criminally greedy "dentists," they are in a position to actually endanger the lives of the patients by causing necrosis of the jaw, blood poisoning, or other infectious and dreadful diseases.

The first dishonest dental parlor of this type on record was opened in Chicago in 1890 and met with such enormous financial success that hundreds of imitations sprang up elsewhere. In ten years these dental parlors flourished from Boston to San Francisco, all operated on the same general plan, and, in many instances, under the same management. The men who financed these dental confidence games used their own names rarely. Usually it was a company, like the "New York Dental Parlors," the "Yale" and the "Harvard Dental Companies," etc.

The silent backers of the enterprises usually placed the actual financial management in the hands of the cashier, always a woman, as women are always in charge of loan shark offices—which explains

how Mr. Gabb was able to effect a settlement with her, and also what restrained him from carrying out his threats of punching the contractor and Dr. Gumm.

The office staff of these parlors often consists only of one student or self-taught quack operator and an expert and affable calculator, who, perhaps, knows nothing whatever of dentistry, and who is called the contractor, as stated before. A Vandyke beard and a professional bearing are his chief qualifications. His duty is to appraise the patient from a financial standpoint, and arrange a scale of prices in keeping.

After the preliminary examination, the patient is turned over to "Dr. Gumm," one of the working dentists—a young graduate of some dental college, preferably, though not always—and that worthy, carrying out his instructions, prolongs the agony as much as possible and bleeds the patient for more "deposits" at each visit.

One mainstay of success of the fraudulent dental parlors that obtain all over America, in small towns and big, is their insistent play upon the word "painless." They convince old ladies and young, from Cape Cod to Catalina (before they test it), that they can really remove teeth without hurting their patients. But they never do. That is something even a good dentist cannot accomplish.

The tricks of the fake dental parlor quacks, some of which Mrs. Gabb experienced, as above set forth, are too numerous to mention in detail. The New York Dental Association, in the course of about 500 prosecutions for unlicensed dentistry, has collected an appalling mass of data, much of it volunteered by the very men who have been employed with these criminal concerns.

CONFESSIONS OF AN OPERATOR.

"We were expected to get all the money possible," said one of these operators,, in his sworn confession. "If there wasn't much work to be done, we had to find defects in the patient's teeth, anyhow. I had a smattering of dentistry, having attended a dental college for a year, but was not a graduate. I got fairly good pay, but only on the understanding that I must do something to every patient sent to me.

"If the contractor made one estimate, I had to 'raise the contract,' by finding new defects that had to be remedied. If nothing else could be done, I told the patient that the gums needed hardening, or that the mouth was too full of acid, and I made people come back day after day when I did nothing except what is professionally known as 'turn

cotton.' That is, I would clean out a tooth for filling, plug it with cotton, and tell the patient I didn't dare to fill it until I knew whether the roots could stand filling.

"Every time the patient returned, it meant another deposit. We wouldn't bother with a patient who didn't make a deposit every visit. If a patient tried to get out of paying, we would inject something to make the tooth hurt, or even remove a filling, and no matter what the work was, we always collected in advance."

Onder the newer laws affecting dental practice in nearly every state, the dentist actually operating on a patient must exhibit his state license in plain view of the patient. In most of the money-grabbing "dental parlors," they place in conspicuous positions on the walls, in ornate frames, the diplomas of dental colleges. Most of these diplomas come from some middle west or southern pseudo-dental institutions, where diplomas have been sold for as little as $50 after a three months' course of study.

The laws require state examination and state licenses, however, and few of the operators in these discredited dental parlors can show them. Usually, there is one man who actually has a license, to avoid prosecution; and half a dozen operators who do the work, flitting from chair to chair, are supposed to be protected by this man's license. This makes prosecution difficult.

"I remember in one of the places where I worked," said another witness, "there was a tinker who didn't know how to fit a gold crown. Instead of cementing it on, he simply ground down the apex and slipped the cap on. The woman was told it was the newest and best method, as she could then remove it after eating, clean it, and always keep it polished. Needless to say, within a month, the tooth had decayed badly and a real dentist fixed it up with great difficulty.

"I can also remember a case in Brooklyn, where an operator, who wanted to curry favor with the management by bringing in large fees, filled a tooth with gold filling, and deliberately left a small piece of cotton soaked in some antiseptic, in the bottom of the cavity. In about four days this cotton worked such damage from gas formed by fermentation, that the filling was actually blown out of the tooth, and the patient came back to have it repaired, having suffered agonies meanwhile. This time the operator took back the gold, put in porcelain cement, painted it with aluminum paint, and collected another big fee."

"I once saw the contractor in a so-called dental parlor order out a perfectly good tooth," confessed another operator, "because there was a decayed tooth on each side, as the removal of the sound tooth would make possible a more expensive piece of bridge work.

"Another trick we had in 'raising the contract' dealt with the full sets of teeth advertised for $5. Anyone entering and asking for a full set at $5, would be shown a large basket of sets mounted on ordinary black rubber. The visitor would be told to take his choice and would spend half an hour trying to find a set that would fit his mouth. At the end of that time, the contractor would inquire what was the matter, and upon being told, would examine the mouth, and declare loudly that no wonder the standard sets wouldn't fit, because the mouth was shaped abnormally.

"This always flatters the patients. They like to think even their disabilities are different from other people's; so convinced, the patient will consent to the doctor making a cast of the mouth, and be shown samples of full sets of 'superior teeth' to choose from. These would cost from $15 to $100 according to the outward appearance of the patient."

The work of the law department of the New York State Dental Society, covering a period of nearly twenty years, has been invaluable in suppressing some of the most flagrant offenders against the law, but experience has proved that the financial rewards are so great that the chief offenders, even when prosecuted, open up other places under assumed names, and run them until the special corps of private detectives employed by the society brings them to justice again.

What small-town man or boy is there who has not seen the itinerant tooth tinker in his buggy, with his gasoline torch, in the courthouse square? Who will not remember "Old Doctor Dalbo, the Denver Dentist," one of the many of his sort who left aching voids in the jaws of the unsophisticated throughout the land?

"Old Doctor Dalbo" was the wonder and awe of the gaping rustics because, through the dexterity acquired by constant practice, he could pull a tooth, throw it up into the air, and have another yanked out before the first one touched the ground. He often did this when the second tooth was sound, but everybody applauded the feat and was greatly edified thereat, the victim not being the least of these.

The "Old Doctor Dalbos" scorned the use of cocaine as a local

anæsthetic. They used what they called "a chemical electric battery," the constituent parts of which were part of the "Great Secret." After the tooth pulling, the "chemical electric batteries" guaranteed to be efficacious for sciatica, rheumatism, and neuralgia, as well as toothache, were vended to the gullible.

The "chemical electric battery" was in the shape of a vaseline bottle, in which was a small quantity of extremely pungent and irritating oil. A small sponge was attached to the lower side of the stopper. When in pain, the purchaser was advised to rub the part affected with a little of the chemical electricity on the sponge, and the pain would promptly disappear. It generally did, but a blister succeeded it. For the "liquid electricity" was oil of mustard, and it was nothing more.

It is from such humble beginnings that the proprietor of the modern swindling dental concerns gets his start.

"PAINLESS PARKER"—FRAUD AND FAKE.

One of the earliest, most famous, and most energetic offenders, who has been convicted three times, according to the records, is the widely advertised "Painless Parker," of Brooklyn.

Parker traveled all over the United States with a brass band and an array of tents in which he lived with his followers and helpers. He is said to have come from Chicago, where he studied dentistry, and to have practiced in small cities of the middle west before invading the rural districts with his tooth-tinker tents.

One of his tents was a large exhibition tent with a stage, in which cheap vaudeville was enacted between the painless prodigy's tooth-pulling efforts, and an admission fee of ten cents was charged. In pulling teeth, Parker administered cocaine—not as any dentist would, with a hypodermic syringe—but by injecting a solution into the cavity, which undoubtedly, in some cases, helped to reduce the sensitiveness.

Before he operated on a real patient, some of his confederates in the audience would crowd to the stage just after the band played or his comedians had performed. Parker would "palm" a tooth in his hand, and make a pretense of pulling it. Then he would ask the pretended patient if he felt any pain. Of course the confederate replied in the negative, and this induced real patients to come upon the platform.

With real patients, "Painless Parker" operated differently. Just as the "painless one" yanked out a molar from the mouth of a real

patient, he would stamp his foot, as a signal, at which the band would play a fanfare and the drummers pound their drums, so that even if the patient yelled the audience couldn't hear the cries above the concurrent cacophony.

Parker afterwards settled in Brooklyn, and the establishment he founded there still remains, though at the present time he claims he has nothing whatever to do with it. After his three convictions for operating without a license, he sold out. The "Painless Parker" name was such a good advertisement, however, that other parties took it up, by purchase, and are now using it.

The real "Painless Parker" went to Los Angeles, and other western towns; and now the "Painless Parker signs may be found in many big cities, though it is to be doubted if the original Parker has any actual connection with them.

SOME "PAINLESS" PIONEERS.

Dr. Arthur Rankin, who is said to have paid the enormous rental of $31,000 a year for his establishment at 366 Sixth avenue, New York City, at the height of his prosperity is reported to have made over $300,000 before he was put out of business by several prosecutions.

The famous Dr. Tarr, who had an elaborate suite of offices at 44 East Fourteenth street, New York City, made a fortune before three men from his office were convicted for practicing without a license, and his place was closed. He is now in Chicago.

Oliver W. Hall was in a fair way to make a fortune with the "New York Painless Dental Company," when the detectives descended upon him; and his brother, A. E. Hall, was doing likewise with the "Yale" Dental Company," of New York.

Both the Halls, however, were relegated to comparative obscurity when George Gagnon opened his "International Dental College" on Sixth avenue, New York City, and by sensational advertising undertook to grab all the dentistry bargain hunters in Greater New York.

Gagnon was in many ways one of the most picturesque of the dental parlor kings. He lived at the Waldorf, won the blue ribbons at the horse show, and was a high roller generally, until continued prosecutions put him out of business entirely.

While the aid of the law against dishonest dentistry has been evoked in over 500 cases in the State of New York alone, it is found that the best method to combat the evil of the fake dental parlors is a campaign of public education.

Legal prosecution is difficult enough in the large cities, where evidence can be secured only from patients who have been wronged, or by the detectives themselves acting as *agents provocateur*. But either system of obtaining evidence has its disadvantages. People who have been swindled hate to admit the fact. American juries look with disfavor upon the French system of *agents provocateur*—hiring men to persuade other men to commit crimes in order that they may be arrested. In small cities it is actually impossible to secure convictions, as the local juries side with the local citizen who, apparently, is being prosecuted by outside parties.

Therefore, if the public at large learn of the evils of the dishonest dental parlors through the recital of the experience of Mrs. Gabb, these swindling concerns will die natural deaths.

But many thousands of men and women, in many places, have paid in pain and pocket for the wisdom gained by Mrs. Gabb. At the junction of Flatbush avenue and Pacific street, Brooklyn, is a gigantic brownstone building, that fronts Brooklyn's busiest square. This building, emblazoned with blue signs, is a monument to the colossal and blatant self-puffery of the most notorious of all the swindling tooth tinkers. It is the original headquarters of the most conceited charlatan that dental quackery has ever known, the citadel of "Painless Parker," the drum-corps dentist.

The staring signs, with apt alliteration's artful aid, promulgate the praises of "Painless Parker." "Proclaimed by Public, Press, and Pulpit!" says one sign. "Painless Parker is Positively Perfect!" reads another. "Pains and Pangs Positively Prevented!" "A Pittance Pays for Permanent Preservation!" "Pageants of Pleased Patrons Pass and Praise!" "Pause, People, Painless Parker is Pronounced a Paragon!"—this profusion of painted panegyrics of the "Painless" person—I've caught it, too—shout at the passer-by from front and sides, while the roof is given up to the modest statement, in letters ten feet high, "Painless Parker Is Positively IT!"

It is buffoonery that has brought business. It is one of the things that makes Brooklyn famous—perambulators, potted plants, and "Painless Parker."

The Mrs. Gabbs of Mr. Goodthyngs of everywhere, for their tribe is many, believe in signs until they get their eyeteeth extracted. Until which time they crowd the dental parlors where "Painless Parkers" proffer panaceas for persistent pangs at popular prices.

THE PRACTICE BUILDER.

WILL IT HURT?

Patients ask all sorts of questions, the outcome of various forms of invidious apprehension, but there is, I think, no question which comes with more frequency or with a more obvious sincerity than that which stands at the head of this paper. Whether the assurances of the operator have ever been less cheerful than they are now I cannot tell; that they have been less true I think history will agree, and that they may become more true, and, if possible, more cheerful, is the subject for which we are all working.

It is common knowledge that only a small proportion of those who need our services have the courage to submit to our tender mercies. Some are kept away by fear of our charges, and I confess that, for them we have at present little to offer, and that our position in regard to them is causing anxious thought to many of the best and wisest of our members. Let us all at least keep our sympathy alive and be ready, when our leaders have found the way, to do our part in supporting them.

But the chief factor that keeps people at home, swallowing ptomaines and malevolent micro-organisms in quantities before which the proverbial peck of dirt fades into insignificance, blistering their gums and cheeks with oil of cloves, whisky, yea, even turpentine, pocketing up their wrongs under penny sticks of gutta-percha or masses of a celebrated toothache gum which shall here be nameless; the cause of all this is fear, abject physical fear. More often than not, I think, it is fear of the unknown that does the mischief, but, for the present, if we can abolish the fear which comes from experience, we may safely leave to the future the fear which belongs to the unknown.

Time was, and that not long ago, when temporary teeth were allowed to go their own sweet or sour way under the assumption that they were not worth filling, a system of general neglect, tempered by occasional extraction. That idea is being rapidly dissipated, and year by year we are called upon to treat the teeth of more and more juvenile patients. I often hear men say they are glad thy will not have to treat the teeth of the next generation, and groan about the impossibility of doing good work for the tiny people who are brought to them

now, and certainly it is difficult to do text-book fillings for small people who have little endurance, half-inch mouths, and inexhaustible funds of restlessness and saliva. But these little patients are all-important to us, and it is while they are little that we have the greatest chance of making them regular attenders, and of minimizing or abolishing their fears.

I am sure that, as it is most important, so it is most easy to gain the confidence of very young children. One man may steal a horse where another may look over a hedge, and so one may steal or drill holes in a lower molar when another may not look into the mouth. It is perfectly certain that if the patient is hurt, either physically or mentally, before the mouth is opened, the chance of a profitable sitting is discounted almost to nothing.

Yet I have often heard of children, decent, healthy, well-disposed children too, being so terrorized by a brusque greeting that not all the chocolates in Fuller's nor all the shillings in Parr's would persuade them again to face the man who barked at them, or bumped them into his chair like sacks of coal on to a scale.

The human infant is very like other wild animals, the younger you catch him the more easily he is tamed. Gentle hands are of course indispensable, but it is almost equally important to use a gentle voice—the lion must roar you as gently as any sucking dove.

One of our greatest assets in dealing with children is their insatiable curiosity, they are so easily interested, and we use so many curious things that they generally get a good deal of entertainment in the odd moments between our spells of excavating and repairing. There should, I think, be as many of these odd moments as possible, and as a general rule, the child may be trusted to arrange that, but there some good little people who will endure a great deal without complaint, and go on responding to "a little wider, please," while their jaws and necks are aching for a change. There may be no trouble in the surgery, but the whole business will be talked of for weeks after, at nursery teas, and if we have offended we shall be cheerfully given away, without malice, but without extenuation.

Coming now to details, what can be done to minimize the terrors of extraction? In my own experience, and I speak of nothing else, extraction for children of three or four years of age is extremely rare, and in nearly all the cases I can recall there has been a really bad mouth and several teeth to be extracted, so that we have called in a

doctor to administer $CHCl_3$ or ACE. It is a very simple business, children suck it in like milk and recover very quickly and happily. In older children, temporary teeth needing extraction are rarely firm; when they are so the gum is usually healthy, and if gas is out of the question a satisfactory result can be obtained with a local anæsthetic. Where the gums are inflamed and riddled the teeth are usually loose and beyond a persuasive manner and a quick wrist there is not much needed, but I have found a plug of wool soaked in five per cent novocain and laid upon the gums very helpful. In all cases I think the patient should be warned at the psychological moment and the extraction should follow the warning as quickly as possible. Some patients, I know, require to be rushed a little, but even with them a short warning is of more avail than a long apology.

Coming now to filling, my own impression is that the dentine of temporary teeth is by no means so sensitive as that of permanent ones, and I should very much like to hear what other members think on that subject. Preliminary dressings of carbolized resin and tannic acid certainly make it possible to excavate cavities which have previously resented the slightest touch, and I do not find that children have anything like the same fear of the engine as that which devastates the souls of their elders. In Ame's copper phosphate we have a filling very adhesive, very antiseptic, and fairly enduring, so that cavity preparation for its reception is reduced to a minimum, and I find it invaluable for compound cavities. I have read that two approximate cavities may be filled with one filling of gutta-percha or amalgam. With gutta-percha I have always found that the filling pushes up between the teeth and the last state is worse than the first; with amalgam used in that way I have not been bold enough to acquire any experience, and I should be glad to profit by that of others. Blunt excavators and chisels are, of course, about as comforting as blunt razors, and sharp ones are not so good as very sharp ones. In the case of small exposures in temporary molars I have frequently used a small celluloid cap—I wish they would make them smaller—containing oil of cloves and carbolic acid, and have been able to save the tooth for a long time. In the majority of cases, if not in all, the pulp has died after a few months, during which there has been no trouble, and I have then drilled into the pulp chamber from the side, at or above the gum line. Rhizodontrophy is a fearsome word, but the operation I have found simple and successful, both in the above

cases and in those where I have killed the pulp with arsenic, and cleared out and capped the pulp chamber without attempting to expose the roots.

I should very much like to shirk the next question which occurs to me, namely, how can we best preserve the six-year-old molar when the pulp is exposed at any age up to twelve. I have not found capping a success in these cases, and the use of arsenic where possible has been almost invariably painful and frequently ineffectual. In very few cases has pressure anæsthesia proved satisfactory, and I hope that some one here can give us a hint as to what is best to be done. Personally, I must confess to disappointment, and own that, except in single-rooted teeth, and in those only when the exposure is recent, I have rarely had complete success, and now attempt it in molars only when there is great difficulty about getting another sitting.

In dealing with sensitive dentine in cavity preparation I have not been able to make much use of cocaine, and where another sitting has been impossible have had to rely on hot air and aromatic oils, which, at the worst, are a great help to the patient's faith. Where there is no time difficulty, I use either of two preparations almost indifferently as a temporary dressing, and though it is impossible to measure the effect of such things, and difficult to form any true estimate of their value, I have found always some benefit from their use, and often a very great advantage. The first is erythrophlein hydrochloride, and the second eudox. The latter I believe is the better known, and is certainly handier in form, but I think not quite so effectual as the other. Erythrophlein is a powder, in appearance not unlike tannic acid, and is evidently a very powerful agent. A quantity no larger than pin-head is moistened with eugenol or oil of cloves, soaked up into a tiny piece of wool or bibulous paper, sealed in the cavity and left for not more than forty-eight hours. There is said to be danger to the pulp in leaving it longer, but of that I cannot speak from personal experience, though I have heard of a case in which the pulp was killed in a week. It has enabled me to prepare thoroughly many cavities which, before I knew it, would have been half prepared and filled with osteo in the hope that bye and bye it would be possible to do better.

Many people suffer a good deal of pain at the necks of teeth from which the gum is receding, or where the enamel is for some reason wanting. A paint of zinc chloride in gum mastic does very well in

these cases, and is easily applied by the patient. The prescription for the patient's use is gum mastic ℥i., chloroform ℥ss., chl. mv. It is given in Smale and Colyer, but though I have found it most useful I have never heard it mentioned.

No paper on this subject would be complete without a reference to local anæsthesia by injection, in which connection we can all tell such wonderful tales of innumerable and prodigious painless extractions, each with his own favorite injection. For nearly four years I used a well-known cocaine preparation, supplied in a bottle with a red jacket and a cork, about which latter I am free to confess I never felt very happy, but then the results were so good. In that time I one sometimes saw in the days of cold blood extractions, but in only had a few cases that healed slowly, but none in which there was any serious sloughing. A few people showed signs of faintness which were more slowly and with more difficulty overcome than the faints two cases did I see symptoms of any gravity, which I could unhesitatingly pronounce to be toxic. In each case the patient complained as soon as the extraction, one tooth in each, was performed, of feeling "funny" and shortly after of faintness. I put the head down and gave a dose of sal volatile, and the pulse reacted at once. There followed in each case hysterical outbursts of tears, and in one a very considerable and distressing loss of mental control. The pulse in each case was very erratic, now quick and weak, now slow and fairly full. Syncope seemed to be imminent at first about every three minutes, but was always warded off, and gradually the more normal intervals became longer, and fortified by large quantities of hot black coffee each patient was able to go home after about an hour, and was perfectly well next day. Each complained that she could not move her arms, though each could do so to some extent, and one complained very bitterly of cold feet. I mention these details because one hears so little of these things, and I, for one, should be very glad to hear more.

After reading Doctor Pare's paper in the *British Medical Journal* of May 18, 1907, I determined to try novocain, and I have found it so good in every respect that it is now my stock injection. I have used as many as four tablets, that is 1.3 grains of novocain, at a sitting, but have not seen any toxic symptom, or, indeed, any unfavorable symptom following its use. It appears to have a better effect than

cocaine upon inflamed tissues, and sockets heal beautifully after its use. The drawback is the necessary five minutes' wait after injection, but the advantages seem altogether to outweigh this, and I hope the experience of others has been no less favorable than mine, and that we shall not unearth any further objection to this most valuable aid to surgery.

With the best of anesthetics there is no room for roughness on the part of the operator, and it is well to remember that there is no operation more feelingly criticized by patients than our attempt to extract the tooth, the whole tooth and nothing but the tooth.

I make no apology for these somewhat trite observations because I find that as time goes on and the daily round becomes more and more familiar there is more and more danger of becoming a little callous, of running the engine a little longer at a spell than one used to, and of using a little more pressure than one formerly allowed oneself. And the busier one grows the greater is the temptation to think more and more of the filling and less of the patient. This brings us to the most difficult question of compromise between mechanical perfection and gentle, considerate treatment, with its dangers on the one hand of putting upon a delicate, sensitive patient an unjustifiable strain, and on the other of persuading ourselves that the lazier course, being less exhausting to the patient, is the right one to adopt. Here is a simultaneous equation always before us, yet differing with every patient and with every condition of our own minds and bodies. This, I think, is the most difficult problem we are called upon to solve, and I trust that in the discussion of my poor, but honest effusion, we may each obtain some help towards the solution.—*L. H. Dent, British Journal.*

DENTAL LITERATURE.

BY FRANK L. PLATT, D.D.S.

Literature in its best sense is one of the high arts, and relates to thought that is inspiring and elevating rather than to that which is purely technical in character or for a class, trade or profession, but that portion of recorded thought which pertains to any epoch, country, people or branch of learning is the literature of that particular subject.

Dental literature, then, is the written or printed thought relat-

ing to the history and development of dentistry, and while from necessity little of it may rank with the truly great literary productions of the world, it is invaluable to the profession of dentistry and much of it will live forever as the recorded thought of those who have contributed to the establishment of our great profession. The earliest specimen of dental or medical literature known to exist today is found in the Ebers Papyrus, now in the library of Leipzig University.

This ancient papyrus, containing both medical and dental formulas, was procured by Prof. George Ebers early in 1873 from a citizen of Luxor, in upper Egypt.

It is written in hieratic characters, an abbreviation of hieroglyphic writing, and dates from about 1500 B. C. Some parts of it, however, have their origin as early as thirty-seven centuries before the Christian era.

It is worthy of note that medicine and dentistry, as recorded in this papyrus, were contemporary sciences nearly six thousand years ago.

According to tradition, dental surgery originated with Aesculapius, the god of medicine, who is supposed to have lived between the twelfth and thirteenth centuries B. C., and a little of dental history and literature is recorded in these traditions.

The work of Hippocrates contributes also to the early literature of dentistry and, while not one entire chapter of the works of this author is devoted entirely to dentistry, a great number of references to the teeth is found in the Hippocratic collection, among other things he says in the book De carnibus: "The first teeth are formed by the nourishment of the foetus in the womb, and after that by the mother's milk. Those that come after these are shed are formed by food and drink.

"The shedding of the teeth generally takes place at about seven years of age, those that come forth after this grow old with the man unless some illness destroys them."

He also mentions the diseases of dentition and refers to dental abscesses affecting the eyes and ears and to the fact that people with long shaped heads are apt to have "strongly arched palates" and irregular teeth.

So we find from a study of this early dental literature that some of the things which command the attention of modern dentists and

orthodontists had been studied and recorded over twenty-five centuries ago.

Hippocrates also speaks of binding the teeth together in treating fractures of the lower jaw.

Comparative dental anatomy is treated quite at length and in a most remarkable manner by Aristotle, the greatest philosopher of antiquity who lived from 384 to 322 B. C.

Celcus and Caius Plinius Secundus, who lived early in the first century of the Christian era, wrote quite extensively of dentistry, the former recommending that teeth loosened from a blow or accident be bound to adjoining firm teeth with gold wire and that astringent mouth washes be used. He also speaks of forcing a permanent tooth erupting out of place, into position, after the extraction of the temporary tooth, by daily pressure with the finger.

Claudius Galen, born in the year 131, is the first of the ancient authors who speaks of the nerves of the teeth and differentiates between pain in the teeth and pain in the gums.

Arabian writers of the eighth, ninth and tenth centuries contributed quite extensively to dental literature, though a considerable part of their writings consisted of compilations of the scattered works of earlier writers. The most noted of the Arabian writers who paid particular attention to the teeth and their diseases was Albucasis, who lived in the eleventh century. He was the first author to call particular attention to the necessity for the removal of tartar, and devised scrapers and scalers of many forms, and his book is the first so far as is known in which are found figures of dental instruments. He wrote extensively of the extraction of teeth by means of forceps and elevators, but always insisted that this operation was to be performed only as a last resort when all other means of relieving pain had failed.

From the thirteenth to the fifteenth centuries dental literature received contributions from many authors, but little real progress in the art of dentistry is noted until early in the sixteenth century

In 1544 Walter Hermann Dyff wrote the first book devoted to dentistry alone, independent of medicine and surgery. This book is also noticeable as having been written in German, a living tongue, rather than in Latin.

Vesalius, Paracelsus, Falopius and Eustachius, were among those who exposed the falsity of the conclusions of many of the earlier

writers and helped materially to place dental and general anatomy on a scientific footing. Ambrose Pare, who was born in 1517, contributed extensively to dental literature as well as to the progress of practical dentistry, and is the first to mention the use of obturators for closing openings in the palate.

Urbain He'mard, in 1582, wrote the first dental monograph that appeared in France, and about this time works on dentistry also appeared in Germany, Spain and Italy. Throughout the seventeenth century many writers have left a record of dental history, but it was left to Pierre Fauchard, the founder of modern scientific dentistry, to publish in 1728 a work which marked a new epoch in the history of the dental art.

Fauchard was born in Brittany about the year 1690, and died in Paris in 1761.

His celebrated work was written in 1723, but was not published until 1728; it was translated into French in 1733 and two French editions were published in 1746 and 1788.

In this single work for the first time was published the whole knowledge of dentistry as it had then been developed its importance as a specialty was established, and it was given a solid scientific basis.

Fauchard's work was very complete and covered practically every branch of dentistry, even orthodontia and oral surgery were not omitted, and we may say that all modern dental literature is founded on the work of this illustrious author.

Mouton, in 1746, published so far as known, the first work on mechanical dentistry, in which he mentioned the use of gold crowns, those for the front teeth being enameled.

Following Mouton were Runge, Pfaff, Burdet, Jourdain, Bunon, and John Hunter, whose works were published in 1771 and 1778.

The names of modern contributors to dental literature are better known to all of us, Harris, Tomes, Gorgas, Garretson, Flagg, Bonwill, Guilford, Essig, Burchard, Marshall, Evans, Johnson, Talbot, Miller, Black, and a host of others have contributed to the history and literature of our profession, more than that—they have made dentistry a profession.

Had no one practicing the art of dentistry ever written of his accomplishments, observations and discoveries, dentistry today would have been no more than a craft, a few master mechanics, if you please, with their apprentices and imitators, admired for their skill and

sought for their services, but dentistry would have been a trade with a union, perhaps, and walking delegates, lockouts and strikes, and a card from the union would have held the proud place now occupied by our diplomas and state licenses, showing only that its possessor belonged to the union and was not in arrears for dues, but like most union cards, denoting nothing of learning or skill.

As embodied in our text books, dental literature is the great store house of learning in which our students seek for knowledge; as exemplified in our journals, dental literature finds expression for new thoughts, discoveries and inventions, or old ones shown in modern costumes, brought up to date and made to fit the moving spirit of modern life.

In our text books and journals the work of specialists is made familiar to every general practitioner who cares to read, and the whole fabric of dental history and science is within the reach of all of us.

The art of giving written expression to our thoughts is not so much a gift as an accomplishment, it may be attained by anyone, and he is poor indeed who fails to realize the debt he owes the writers who have made his profession what it is, and who, having something new to say, feels unable or unwilling to record it in words which bespeak his character, his sincerity of purpose and his good intent in placing before his fellows for their benefit the record of his accomplishments.—*The Pacific Dental Gazette.*

LEARN TO EAT SLOWLY AND THOROUGHLY.

SLOW EATING SOLVES ONE-HALF THE PROBLEM OF HEALTH.

(There have been many editorials written for the daily or newspaper press, but by far the most logical editorial deduction comes from the William Hearst journals. It deserves to be brought to the attention of your dental patrons, as it views the problem of dental preservation, from the hygienic and not the financial aspect.—Editor.)

In the eyes of doctors, three things distinguish the American people especially:

CONSUMPTION.

DYSPEPSIA.

BAD TEETH.

All three of these difficulties are intimately connected with the great national defect, OUR TOO RAPID EATING.

All Americans are in a hurry, even when they have nothing in particular to do. They talk in a hurry, walk in a hurry, think in a hurry and EAT in a hurry.

The quick lunch is an American invention, and one of the worst of all inventions.

The sensible Englishman, or Frenchman, or German, who has but a few moments to give to eating, devotes his time to eating little. He eats that little rationally and slowly.

The American does just the reverse. He feels bound to eat a certain amount, and if the time is short he makes up for it with extra rapid eating, bolting food practically whole.

Our quick-luncheon counters, and the great majority of our midday restaurants, are simply gigantic manufacturers of dyspepsia and consumption.

Consumption is developed by too rapid eating, because consumption is the result of an insufficient supply of good blood. And good blood can only be produced by food properly chewed and thoroughly digested.

The national difficulty with defective teeth comes also from our rapid eating. To keep the teeth in condition, we require a great deal of chewing on dry and more or less HARD substances.

As we are in too much of a hurry, and too foolish, to eat slowly, we select in preference such food as can be swallowed without chewing, hence the national mania for mashed things—hashes, soft pies, cereals soaked in milk, soft white bread, whence the best qualities, the hard covering or outer shell of the wheat or rye, have been eliminated.

To keep a horse in condition, you must give him hard grain to chew, and if possible a certain amount of corn on the cob at intervals. If you do not give him this, he instinctively chews his manger to keep his teeth right. So much for the effect of quick eating on the teeth.

But we want you especially to think of eating slowly in connection with that remarkable affliction, dyspepsia.

Nothing makes life so miserable or interferes so widely with the usefulness of the average American as dyspepsia.

Practically all of our very successful men, especially in financial affairs, have suffered from dyspepsia. Jay Gould was a victim of it, John D. Rockefeller's life is made miserable by it; it causes the pro-

duction of half the patent medicines, and employs three-quarters of all the doctors in the United States.

Have you ever noticed the marvelous powers in the muscles of the jaw? You certainly have, if you have ever bitten your tongue by accident, or if you have seen the man in the circus slide down an inclined rope by his teeth.

Almost every man has strength enough in his lower jaw to lift a trunk or a man of his own weight. Why do you suppose that great strength in the muscles of the jaw was given to you? Do you think it was given to you to TALK with? No; it was given to you to CHEW with.

And have you ever studied your teeth and thought of their extraordinary adaptation to their work—the front teeth to cut off and the big, broad back teeth to chew with? Do you suppose those teeth were given a creature meant to live on soft hashes or mush and milk?

For the sake of your personal welfare, just think for a moment about the process of digesting food.

You know, of course, that certain secretions, juices of the body, attack the food, disintegrate it, and convert all that is nutritious in it into life-giving blood.

Two great processes are involved in digestion—they are equally important.

The first is the chewing of the food.

The second process occurs after the food is swallowed and taken into the stomach.

The average man eats as though he thought that his teeth were given to him simply in order that he might cut the food into pieces small enough to be swallowed. Whatever he can swallow without chewing he does not chew at all. Hence our national fondness for dyspepsia-breeding hashes, chowders, etc.

The important thing about the process of chewing is not the cutting into small pieces, but the thorough mixture of the food with the secretions of the salivary glands in the mouth.

If you are hungry, and you see something good to eat, you say: "My mouth waters." It DOES water, because nature, when you are about to take in food, stirs up to activity the salivary glands.

YOUR DUTY IS TO CHEW EVERY PARTICLE OF FOOD OF WHATEVER KIND, SOFT OR HARD, NOT ONLY UNTIL

IT SHALL HAVE BEEN REDUCED ABSOLUTELY TO A PULP, BUT UNTIL EVERY PARTICLE OF IT SHALL HAVE BEEN THOROUGHLY MIXED WITH THE SECRETIONS OF THE SALIVARY GLANDS.

This is not the most pleasant topic in the world for editorial discussion. But it is a very necessary topic, since millions of Americans ruin their health, and shorten their lives by a third or more, because they stupidly refuse to realize the importance of chewing slowly and thoroughly.

If you would eat each day exactly one-half as much as you do at present—supposing you to be the ordinarily well-fed citizen—and if you would chew the remaining half for a period three times as long as that which you now devote to your entire meal, you would be a stronger, abler man, and never know the meaning of dyspepsia.

The great old men of the Old World—Gladstone, Von Moltke and the Pope—have all been remarkable for very slow eating and deliberate eating. The Pope, in his admirable Latin work on the wise life, accentuates especially the importance of deliberation and moderation at meals.

Bismarck lived to be old because in Dr. Schwenninger he had a man who FORCED HIM to eat slowly and carefully.

Napoleon was a dyspeptic wreck and a failure at forty, because, while he ate heartily, it was his boast that he never spent more than fifteen minutes at a meal, and unfortunately he had no Dr. Schwenninger to enforce moderation.

PRACTICAL SUGGESTIONS.

UTILIZE YOUR WORN MANDRELS.

When a mandrel has been used for some time and will no longer hold a disc firmly, instead of discarding it, as so many of us do, place a carborundum stone on it and in time we will have a good assortment of stones ready for instant use, and it will save both time and money.—*Dental Cosmos.*

AN ETHICAL CROWN.

Take a common plate tooth of proper shade, size and bite, grind it to accurately fit the anterior or labial part of the root to be crowned, the root being ground well under the gum on the labial side. Now fit accurately a detachable post to the root. Press the tooth to position with a good, firm inlay wax, trim the wax flush with the shoulder on the lingual side of the tooth, remove and cast, using pure gold or 22 karat.

This gives a crown whose incisal third is translucent and one that cannot be detected from the labial.

If a short bite tooth be used the crown will be as strong as any Logan crown, fit better than any Richmond crown, and be more pleasing to the eye than either.—CHAS. A. ELLER, in the D. D. S..

REMOVAL OF STAINS FROM TEETH.

For a metallic stain, or a stain brought about by the application of iodin to a tooth containing a metallic filling, use the chlorin method. For an iron stain, other than that caused by pulp disintegration, use oxalic acid. This is more effective after the tooth has been treated by the sodium dioxid method, thus forming an oxid of iron which is soluble in oxalic acid. For silver stain, first apply iodin, thus forming an iodid, which may be dissolved by the application of a saturated solution of hyposulphite of soda. Mercury stain calls for the same treatment.—A. E. Gibson, *Australian Journ. of Dentistry.*

SEPARATOR FOR PLASTER IMPRESSIONS, ETC.

Dr. J. E. Nyce, of Philadelphia, recommends liquid silex, as sold at the dental depots, diluted with about six parts water. Use water quite hot when mixing it with the liquid silex; it should be cold, however, when used. It may be applied to the impression immediately on its removal from the mouth; if the impression has become dry, immerse it in water before applying the separating fluid. It is not necessary to wait until the coating has become dry before making the model; the plaster may be placed in the impression immediately.—*Dental Cosmos,* May, 1910, page 579.

POLISHING STRIPS AND PARAFFIN.

Drawing both sides of polishing strips smartly over a lump of paraffin a few times before using them makes them cut easier and smoother. It also makes them more effective in the presence of moisture. This suggestion especially applies to the coarser varieties.—T.

To prevent chlora-percha from drying out, add enough oil of eucalyptus to the chlora percha to cover the top of the solution. The oil will remain on top and prevent any evaporation of the chloroform. In using stir the eucalyptus and chlora-percha up. In a very short time the oil will again return to the top and prevent evaporation until again needed.

Detroit, Michigan. GEORGE B. HARRIS.

SOLDERING LEAD: A NEW METHOD.

By placing a ribbon of pure tin, covered with a flux to prevent oxidation, between the surfaces to be soldered, pressing them firmly together and heating the parts with a blow-lamp the soldering is effected at a much lower heat; the tin in position alloys with the lead, making a strong and neat joint.—*Scientific American,* May 7, 1910.

A clean and quick way to mix an alloy compound and Hg. is to put it in a piece of rubber-dam and work thoroughly until the mercury is "taken up."—*L. F. Cory, Hyde Park, Mass.*

BLUE LIGHT IN THE TREATMENT OF WOUNDS.

Dr. Richter reports in the *Deutsche Medizinische Wochenschrift,* according to the *Medical Record,* that sunlight has been proven to have an unbounded healing effect upon various kinds of wounds. Dry air and sunlight are not to be had everywhere, however, and Dr. Richter thinks he has found a good substitute by employing a blue arc light.

The apparatus consists simply of an arc light with a reflector and blue glass panes. The wounds are subjected to the light for a half hour daily. Such exposures lead to very rapid drying of wounds, followed by the formation of a scar.

Especially remarkable is the diminution of pain following the exposure to the rays.

Dr. Richter had favorable results in treating plain granulating wounds, suppurating wounds and especially chronic leg ulcers by this method.—*Pacific Medical Journal.*

RADIO—ACTIVE CHARCOAL.

About two years ago Rutherford discovered that charcoal made from cocoanuts possesses the property of absorbing at ordinary temperature and retaining for a long time the gaseous emanations of radium, thorium, and actinium. Dr. Shober of Philadelphia has attempted to make practical use of this property for medical purposes, especially for the internal application of radio-activity. Attempts to use water as a vehicle of the emanation had failed, because water loses its radio-activity very rapidly. The experiments with cocoanut charcoal have given very satisfactory results, both qualitatively and quantitatively. The charcoal is entirely neutral and permanent, and can be administered internally with perfect safety. It can be made very easily and cheaply, has 200 or 300 times the radio-active absorptive capacity of water, and retains its activity for at least two weeks. The administration of the new preparation is very convenient and affords the possibility of producing, in equal or greater degree, all the effects of radio-active spring water.—*Science.*

WHO'S WHO AND WHY.

[Under this title the journal will devote some space to acquainting its readers with the presidents of state dental, and important local societies; and treat of such other distinguished dental practitioners as the personal news items merit. By this means the readers are brought into a closer relationship with the leading spirits of their profession, and a better understanding can grow out of such an acquaintance.—EDITOR.]

DR. FRANK H. ZINN.

Dr. Frank H. Zinn, president of the Chicago-Odontographic society, the largest dental organization in the world, was born at Goshen, Ind., April 30th, 1860. He is a product of the public school system, having graduated from the Grammar and High schools of his native town. An ambition to acquire greater learning led him to attend the Hinsdale College, and afterward he taught school for a period of eight years. In the fall of 1885 he matriculated in the Chicago College of Dental Surgery and in the spring of 1887 he merited the degree of Doctor of Dental Surgery. He immediately located in the city of Chicago where he has continued practice ever since. When the Odontographic Society was being organized he was one of the original advocates of this splendid conception. The faithful manner in which he assumes a task is well illustrated in that he has been the secretary of this society for a period of thirteen years; when the Chicago Dental, the oldest dental organization in Chicago, merged with the Odontographic to make the hyphenated society, Dr. Zinn was elected its secretary. Last spring as a testimony of loyal services as secretary the organization presented him with a handsome token, such as few men receive. Besides he was elected president of the society and hopes to make a record in the matter of "advanced thought programs." A man of his friendly and cordial bearing could not remain away from societies, as is evidenced in the membership roll of the various dental societies and fraternities in this section of the land.

There are many phases of his dental career which deserve to be commented on, but space forbids enumeration. The home life of Dr. Frank H. Zinn illustrates his love of the family circle; he was married to a Miss Kendrick, and their daughters Dorothy and Earle, are happy attributes in the domestic life of the new president of the Chicago-Odontographic Society.

DR. FRANK H. ZINN

President Chicago-Odontographic Society

ANNOUNCEMENTS.

NORTHERN INDIANA DENTAL SOCIETY.

The twenty-second annual meeting of the Northern Indiana Dental Society will be held at South Bend, Monday and Tuesday, October 17th and 18th, 1910. Clem Shidler, secretary, South Bend., Ind.

THE MICHIGAN STATE BOARD OF DENTAL EXAMINERS.

The next regular meeting of the Michigan State Board of Dental Examiners will be held at Ann Arbor, Nov. 16 to 19, inclusive. A. W. Haidle, secretary, Negaunee, Mich.

NORTHERN ILLINOIS DENTAL SOCIETY.

The twenty-third annual meeting of the N. I. D. S. will be held the third Wednesday and Thursday (19-20) of October, in Aurora. The chairman of the program committee has assured me that he has prepared a "crackin' good" program. Come prepared to assimilate it. Frederic H. Bowers, secretary.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The semi-annual meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the State of Illinois will be held at the University of Illinois (dental department), corner Harrison and Honore streets, beginning Monday, Nov. 7th, 1910, at 9 a. m. "The following preliminary qualifications shall be required of candidates to entitle them to examination by this board for a license to practice dentistry in the State of Illinois: Graduates of a reputable dental or medical school or college, or dental department of a reputable university, who enter the school or college as freshmen on or after the school year 1906-7, must have a minimum preliminary education of not less than graduation from an accredited high school or a certificate from the State Superintendent of Public Instruction, equivalent officer or deputy, acting within his proper or legal jurisdiction, showing that the applicant had an education equal to that obtained in an accredited high school; which certificate shall be accepted in lieu of a high school diploma." Candidates will be furnished with proper blanks and such other information as is necessary, on application to the secretary. All applications must be filed with the secretary five (5) days prior to date of examination. The examination fee is twenty dollars ($20) with an additional fee of five dollars ($5) for a license. Address all communications to T. A. Broadbent, secretary, 705 Venetian building.

EVERYBODY'S CORNER.

Thode-Roe.—Dr. Guy E. Thode, a dentist in Burlington, Iowa, was married September 14th to Miss Elizabeth Roe.

Dentist Shot.—Dr. Boyd Clinite, a young dentist in Aberdeen, S. Dak., was shot and probably fatally injured September 10th.

Dentist Building Infirmary.—Dr. H. G. Langworthy of Dubuque, Iowa, is building a private infirmary for the Ear, Nose, Throat and Oral Surgery.

Dentist Injured.—Dr. Ken Finn, a dentist, at Sharon, Wis., while trying to catch a train September 2 was dragged some distance. His right arm was broken and he was injured internally.

Dentist Disappears.—Dr. S. B. McNutt, a dentist in Des Moines, Iowa, disappeared from his home September 12th and nothing has been heard of him since. It is feared he has met with some accident.

Dentist Secures Patent.—Dr. Montague Hart Tuttle, a dentist in Atlanta, Ga., has invented and patented a telescopic porcelain faced crown having the appearance of a natural tooth to be used instead of the gold crown.

Dentist Thrown from Auto to Death.—Dr. Claude Grenache, a practicing dentist in Pepperell, Mass., was killed September 7th when the automobile he was riding in struck a telegraph pole and threw him under the wheels of a freight train.

Jap Woman Succeeds as Dentist—A Japanese woman has established a dentist's office in London and is said to be doing a fine practice. The success of the Japanese woman in dentistry has encouraged other Japanese women to take up the profession.

Indian Studies Dentistry.—The first full-blooded Indian to enter the dental school of the University of Minnesota was registered this year. He is G. W. Gordon, a Kickapoo-Sioux, and lives in Ashland, Wis. His intentions at present are to work among the members of his race on the reservation. In appearance he is typical of his race and although dressed quietly and inconspicuously, his tall, straight form and copper skin easily distinguishes him from his classmates. At present there are not a half dozen Indian dentists in the country.

Tooth in Woman's Lung Found By Electric Light.—By means of a minute electric lamp which made it possible to see down a woman's throat and into the right lung and to insert a pair of extensible forceps, a Toledo physician removed a fragment of a tooth from the right lung of Mrs. G. Cole, of Van Wert, and without doubt saved her life. Last February, while under the influence of an anaesthetic, Mrs. Cole had several teeth extracted and a portion of a tooth had slipped down into the lung.

IN MEMORIAM.

Dr. Walter T. Withoft, a practicing dentist of Dayton, Ohio, died September 21st. He is survived by his wife, one brother and a sister.

Dr. George E. Morrow, a dentist in Elkton, Maryland, died September 14th at the age of 49 years. He is survived by a widow and several children.

Dr. C. L. Newhouse, a practicing dentist in Minneapolis, Minn., died September 10th after an illness of but a few days. He is survived by a wife and four children.

Dr. Walter Wilson, formerly a young practicing dentist of Richmond, Ind., died September 1st. Death was due to tuberculosis with which the deceased had suffered for several years. He was thirty years of age and is survived by his parents, a wife and two brothers.

Wanted | For Sale | Exchange

NOTE:—Advertisements in this Department not exceeding fifty words will be published **Free** for three insertions for subscribers whose subscriptions have been paid for **one year in advance.**

Advertisements under regular heading from non-subscribers will be inserted for a charge of five cents per word. Remittance in full must accompany such copy.

Copy must be on file in our office by the 15th of the preceding month in which insertion is desired.

In answering these advertisements through the American Dental Journal, enclose your answer in **stamped** envelope with the advertiser's letters marked on the corner. **No unstamped letters will be forwarded.**

We are not responsible for any advertisement appearing in these columns.

PUBLISHERS.

CASH FOR YOUR REAL ESTATE OR BUSINESS—No matter where located, if you want to buy, sell or exchange any kind of property or business anywhere at any price, address Frank P. Cleveland, Real Estate Expert, 2147 Adams Express building, Chicago, Ill.

FOR SALE—One of the best dental practices on the western slope of Colorado, noted for its health and climate, in heart of the great fruit region, full electric equipment, a bargain if taken by December 1st, 1910. Good reason for selling. Address Box No. 822, Grand Junction, Colo.

FOR SALE OR EXCHANGE—Residence and dental office in splendid county seat town of Oklahoma for same proposition in Illinois, Indiana or Iowa. Address S. L. C., care American Dental Journal, 39 State street.

FOR SALE—Dental practice and outfit, and household outfit; former invoices $450.00, latter $500.00, will sell separately. Any reasonable offer accepted. No other dentist, growing town, New York State. Reason: Owner already established in Mexico. Address Apo 143, Saltillo, Coah., Mexico.

WANTED—Dental practices.. My method of finding buyers is successful. No publicity for you. Write for information. Unlocated dentists write for bargain sale lists. Mention states desired. The Dentists' Middleman, C. M. Cryor, D. D. S., Box M., Franklin Grove, Ill.

WANTED — Second-hand operating outfit with chair, cabinet, instruments and brackets. Address Dr. J. H. Jones, Parma, Mich.

FOR SALE—$7,000 dental practice. This is the finest location and one of the best equipped offices in downtown Chicago. Sell at invoice for cash, $1,250. Other business. Address "C. Q. D.," care of American Dental Journal, 39 State street.

WANTED—A second-hand Elgin Vacuum Casting Appliance. Must be in good working order. Address, Dr. D. J. Kuns, Marseilles, Ill.

WANTED—Position by capable manager of fifteen years' experience in advertising office. Would consider purchasing interest in the business. Any dentist wishing to enter into the advertising business please correspond with "Manager," care of American Dental Journal, 39 State street, Chicago.

FOR SALE—Dental office and practice established six years. Favorite Columbia chair, fountain cuspidor, R. & R. cabinet, R. & R. mechanical cabinet and full outfit of laboratory tools. Also good reception room outfit Monthly receipts $200. Rent low, in new building. Small city in Indiana. Practically no competition. Will sell at a very low price. Address N. C. V., care American Dental Journal, 39 State street.

FOR SALE—One blow-pipe outfit (Buffalo), complete, bellows, generator and handpiece, 1 R. & R. operating stool, 1 set, with case, Jenkins' porcelain enamels, 1 S. S. W, swaging outfit, 1 Jenkins' furnace, 1 S. S. W. lathe head, 1 Somnoform outfit, 1 old style S. S. W. instrument case, S. S. W. engine mallet, old style walnut cabinet, L. C. Smith typewriter No. 2 (good as the day it was uncrated). I want a modern switchboard or a good dental chair. Address "Osborne," care American Dental Journal, 39 State street.

FOR SALE—Clark gas outfit, roll top, gold bench and Sharp seamless crown outfit No. 3 set. Address A. G. T., care American Dental Journal, 39 State street.

FOR SALE—Swell and most up-to-date dental outfit in Ohio town of 15,000 inhabitants. Best equipped dental office in city. Splendid opening. Change of business on account of ill health. Everything in first-class condition. A bargain. Address "A. B.," care American Dental Journal, 39 State street.

WANTED—A young single graduate, must be good all around operator and plate worker. Address Operator, care American Dental Journal.

YOUNG DENTISTS waiting for a practice should investigate the mail order business as a means of making money in spare time. Can be run under company name and be perfectly "ethical" THE MAIL ORDER MAN, 908 Chestnut Street, Philadelphia, gives numerous practical plans and other invaluable information. Third year, 10,000 subscribers. Yearly subscription, including treatise, "The Right Way of Getting Into Mail Order Business," 50 cents. No free copies.

FOR SALE—Old established office in county seat town of 2,000, Northern Indiana, good prices, reasons for selling on application. Address "Indiana No. 2," care American Dental Journal.

WANTED—Second hand gas outfit, face inhaler, what have you? Address "Gas," care American Dental Journal, 39 State street.

WANTED—A dentist in every state to demonstrate our dental specialties. Easy money for good demonstrator. For particulars address Metalline Manufacturing Co., 1212 O street, Lincoln, Neb.

FOR SALE—Complete outfit, Harvard chair, bracket and table with cuspidor. R. & R. cabinet, S. S. W. foot engine, foot lathe, bellows, etc., $100. Address "Mate," care American Dental Journal, 39 State street.

FOR SALE—A $5,000 Michigan advertising office, long lease, low rent; inventory, $350. A bargain at $500. Address No. 1000, care of American Dental Journal.

FOR SALE—$2500, Illinois office, no competition, 1000 inhabitants; bargain, $500.00. If you mean business, reply. Address "Quick," care of American Dental Journal, 39 State street.